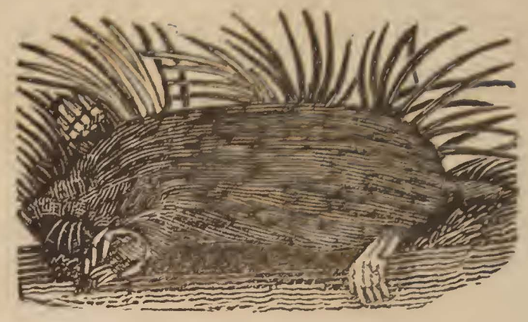
HEDGE-HOG.

WATER-RAT.

BARN-RAT.

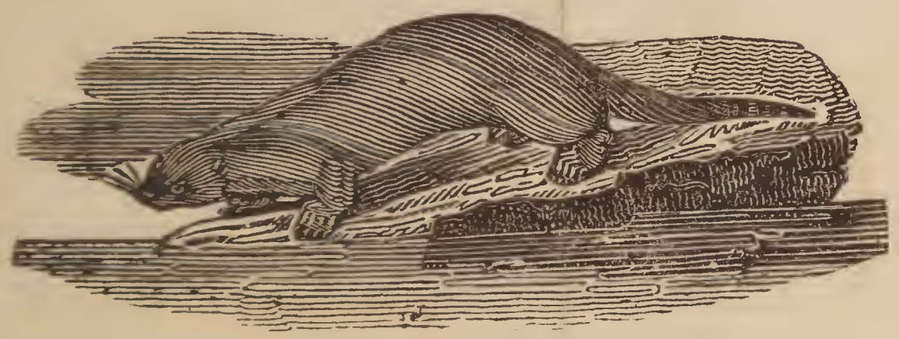


MOLE.

WEASEL.

BEETLE.

POLE-CAT.



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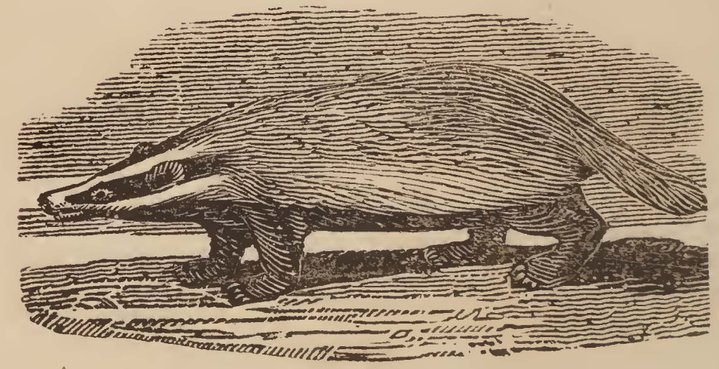
MOUSE.



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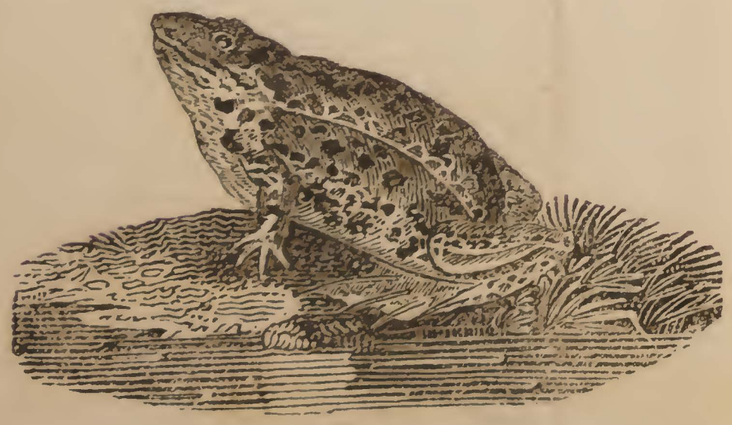

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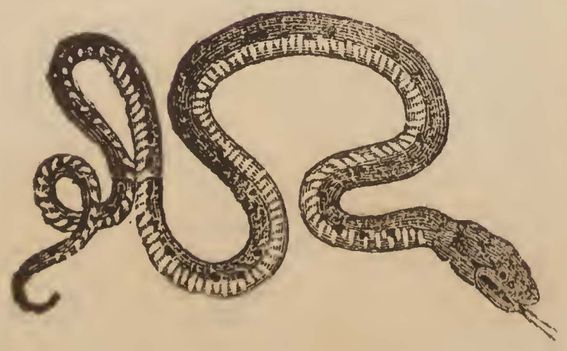

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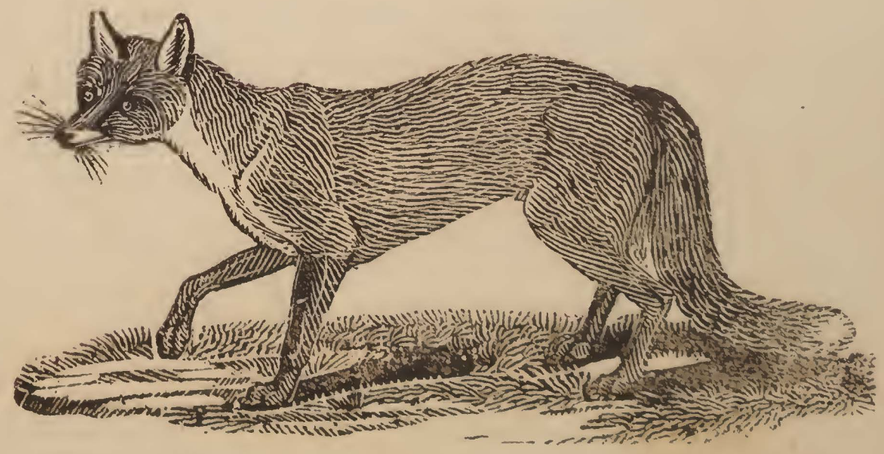

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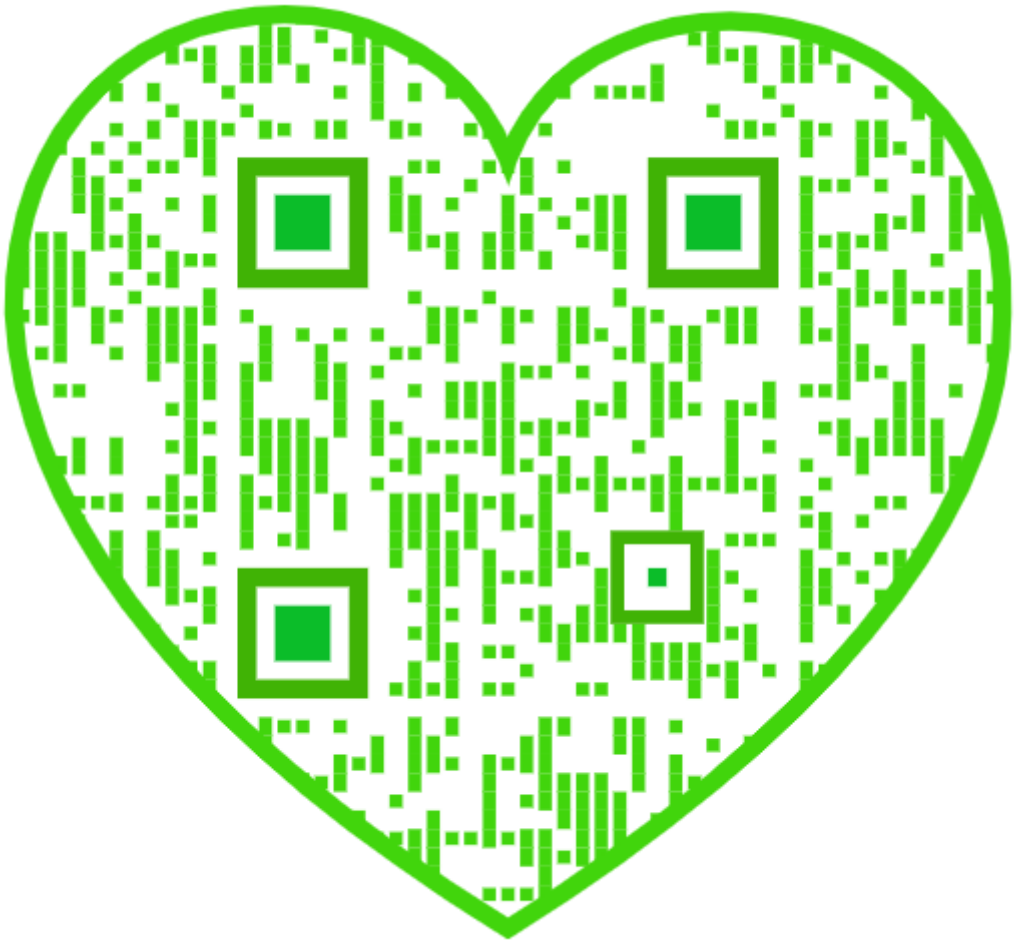


THE

NEW AND COMPLETE

VERMIN-KILLER;

BEING AN

Infallible Directory

FOR

TAKING ALIVE, DESTROYING, AND DRIVING AWAY,

ALL

Four-footed, creeping, and winged

VERMIN,

DESTRUCTIVE TO MANKIND,

DWELLING-HOUSES, GARDENS, &c.

PARTICULARLY

RATS, MICE,
SHEEP-KILLING DOGS,
BADGERS, MOLES,
POLECATS, WILD CATS,
WEASELS, STOATS,
HEDGE-HOGS, OTTERS,
FOXES,
BUGS, FLEAS, LICE,
CATERPILLERS, FROGS,
GREEN-BUGS, SPIDERS, FLIES,
EARWIGS, PISMIRES, SNAILS,
INSECTS, GRASSHOPPERS,
GNATS, HORNETS, WASPS,
WORMS, BEETLES, MOTHS,
KITES, RAVENS, CROWS,
&c. &c.

INCLUDING

Accurate Descriptions of the several pernicious Animals, and effectual Methods for their Destruction.

CALCULATED FOR THE

Use and Service of Housekeepers, Farmers, Warreners,

AND ALL

Families in Town and Country.

LONDON:

PRINTED AND SOLD BY

DEAN AND MUNDAY, THREADNEEDLE-STREET.

Price One-Shilling.

[1825]

PREFACE.

When we consider the great mischief and annoyance to which mankind are exposed by the several four-footed, creeping, and winged Vermin, which not only attack the fruits of his industry, and molest his dwelling, but too frequently endanger health, and accelerate his dissolution, no work, it is presumed, can be productive of greater utility than the present INFALLIBLE DIRECTORY; which includes easy and effectual methods for taking alive, destroying, and driving away, all those pernicious and destructive animals.—Contemptible as the subject may seem, the object is certainly worthy of notice. Though Pharoah laughed at the threatened plagues, yet when Providence was pleased to afflict him and his country with *Locusts*, *Lice*, *Flies*, *&c.* the proud king soon condescended to supplicate Moses for relief.

The finger of God is evident even in the most noxious part of the creation; and they are all, doubtless, produced for divine purposes, the most apparent of which is to humble the pride of man. Every living creature has enemies, but still has the means of evading them; mankind should be equally wary, and exercise that *reason* which heaven has endued him with for his own ease and protection.

The fraudulent practices of *rat-catchers*, the deceptions of *bug-destroyers*, and of their *advertised liquors*, &c. and more especially the egregious mistakes and unavailing remedies proposed in works of this nature, have suggested the absolute necessity of the following publication, which contains not only accurate descriptions of the most obnoxious Vermin, but certain and sure receipts for their destruction and banishment; the whole rendered so clear and comprehensible, that all housekeepers in town and country, all farmers, warreners, &c. may be their own VERMIN-KILLERS.

Such being the plan, and, as experience will prove, such the execution of this work, it cannot be too strongly recommended to all families, who must occasionally feel the sad effects of vermin, and who, in this valuable and useful companion, will meet with so many different and unerring receipts for removing and destroying them, that they can adopt whatever may best suit their convenience.

London,
January 1825.

THE

Complete Vermin-Killer.

RATS.

DESCRIPTION.

We have several kinds of rats, particularly the Norway, or brown-rat, (called also the barn-rat, and erroneously the Hanover-rat), the field-rat, the water-rat, and the common black-rat, or house-rat.

The head, back, and sides of the Norway-rat, are of a light brown colour, mixed with tawney and ash colour; and breast and belly of a dirty white; the feet naked, and of a dirty flesh-colour; the fore feet are furnished with four toes, and a claw instead of a fifth; the length from the nose to the tail is nine inches, and the tail is of the same length. It is more strongly made than the common black-rat, and, like the water-rat, burrows on the sides of ponds and ditches; swims and dives well; and lives on grain and fruits: but will destroy poultry and game. Norway-rats increase fast, producing from fourteen to eighteen young at a time; they are very bold and fierce, will turn when closely pursued, and fasten on the stick, sword, or hand, that offers to strike them. The bite of these rats is not only severe, but dangerous; the wound being immediately attended with a great swelling, and healing very slowly. These rats not only frequent barns, but migrate in great numbers into rocks, sewers, hen-houses, hog-sties, under floors in houses, behind wainscots, ceilings, &c. and do much mischief: they have destroyed the common-rat in most places.

The field-rat is about as large again as a mouse, and of a brown grey cast. These may be found from October till May, and discovered by the shape of their holes in the corn-fields, which are made round, as if cut with an augur. When the farmer sows his wheat, especially upon one ploughing, they run from one end of the furrow to the other, and eat and carry away the greatest

part of the grain. They will likewise run along the drills of peas, and may be found in the hedge-row adjoining the field, where peas are sown, and which is generally the place they lay up their store in.

The water rat is much larger than the common-rat, and is somewhat of a reddish-brown colour; its feet have each five toes, but not webbed; its tail is also much shorter, and all the way of the same thickness, not tapering off, but seeming as if cut off in the middle, covered with short black hairs, and the tip whitish; its teeth are also much longer, and of a pale yellowish colour; it has a thick blunt nose, ears hid in its face, and small eyes; it burrows on the banks of rivers, ponds, and wet ditches, and feeds on small fish, and the fry of greater, on frogs, insects, and roots, and is itself the prey of the pike.

The common-rat, which is the old genuine English house-rat, is of a dusty brownish colour, almost black; and its tail is composed of at least 160 rings. Their propagation has been considerably diminished by the Norway-rats, as the latter devour and banish them whenever they meet; still they are to be found under the ridge-tiles, behind rafters, &c. and the places they frequent are easily discovered by the blackness of their tracks and the smell they leave behind.

Besides these, there is a rat which sometimes resorts to dwelling-houses, called the bloody-rat; which has two claws on the feet instead of one. These rats frequent church-yards, and pray upon corpses; they have been also known,.when in dwelling-houses, to seize people in their beds, and to murder children. If distressed for food, they will eat clothes, curtains, hangings of beds, &c. &c.

How to catch the Norway Rat.

When you have discovered their haunts, you must put a trap, (hereafter to be described) as near the place as possible; put a small piece of stick across under each end of the trap, near the standard, to prevent it from falling down or striking, and it will remain in the same position as set, and the rats have free liberty to go in and out at pleasure, in order to embolden them before you set your traps in earnest to take them; then scent it by a method hereafter to be explained, and it will not want scenting again for a twelvemonth; for once a year will be quite sufficient. Take some chaff of any kind, mix some wheat-corn with it, and put some about the bottom of

the trap; this prevents them forming a notion that it is a trap. If it be in a place where you cannot procure chaff, throw a handful of oats, barley, or malt, about the bottom of the trap; but chaff, mixed with some kind of corn, is preferable. You will have occasion to do this only for the first time of setting the traps to work; for when once some rats have been caught, and have made water and dunged therein, they will be in better order for it. It is wrong to wash the trap clean before you set it again, as is commonly the practice, from a mistaken notion that the rat will be deterred from smelling the dung, and perceiving the tracks of his companions; on the contrary, he will enter with greater confidence where he finds his brethren have been before him; but if it hinder the trap from striking, or it be got under the bridge, then take it out.

If you perceive that they come to four or five different places, by all means put a trap at each place. Some people, afraid of a little expence, make shift with one trap only, in which case, they are obliged to move it about, which makes them shy, and when they miss some of their companions, they are still shyer; mind therefore to have a trap at each place; set them all to feed at the same time, and put a little bundle of straw at each end, that they may go in and out privately; and if you cannot get any straw, shelter each end of the trap with some old boards, and keep them as private as possible; for this they like, and it will answer your intent the better. When your traps are all set, as near the places where they run as you can, you must feed them after the following manner: put some of the food (the receipt to prepare which will be hereafter given) at their holes, scatter a little quite up to the end of the trap, and so along to the bridge within side, and there put a handful. When this is performed at each trap, you must stay two or three nights before you go to them, and you will see which trap they have eaten out of; perhaps from all of them, or possibly from only one, as sometimes they are very shy; for they have been known to eat the food prepared for them, from their holes quite up to the trap, for weeks before they would enter it; but when once they have entered, and find they are not hurt, they will then come freely enough. In the next place, when you go round to take a survey of your traps, take notice of those they have eaten out of, and put some more food

in; but after the first time of feeding them, you need only to put a handful on the bridge. Make it your rule to take this survey in the morning, and when you perceive they come to feed boldly and freely, then is the proper time to think of taking them. But for two or three nights previous to your catching them, when you have given them food in the morning, remember to look at the traps again at night, for if it be a quiet place, they will feed by day-light, and where this happens, set those traps going in the day-time, and the rest in the evening; and as they are caught, take them out of the trap, by means of a little wire cage, hereafter described, and then put them into a large cage, which shall also be described; proceed in this manner till bed-time, and then put up all your traps again, that they cannot strike, by means of a small piece of stick laid across under the ends, as before-mentioned, and put some more food in them for two or three nights longer, till they are become bold, then set them all again; and this may be transacted without breaking your rest in the least; but in some places where they lie in the ceilings, or behind the wainscots, they are not in motion till the house is still, and the family gone to rest, and in this caae you must sit up later. Should business intervene, that you cannot conveniently put your design of catching them into execution, give them a little food again; for if they come for their supper, and you have neglected to leave them any, they will be disappointed, and obliged to go to other places in search of food. Observe, the night you set your traps going, to lay food that they cannot carry away, and put but a little on the bridge, and on each side, that you may be sure of catching all that come to feed; and if in going round to your traps two or three times, you observe one of them that has not struck, strike it yourself; for sometimes they will not go down easily if they stand long, but become difficult to strike, when the rats, having eaten the food, will consequently escape. As they are caught, go round, and take them out with your small cage, and put them into the large one: if in that trap where they have fed the best, you have not caught one, according to expectation, be not in the least discouraged, for they will come again, and disappointment may have been occasioned by their having met with some other vermin in the way; for sometimes a weasel, stoat, or polecat, will go in and baulk your traps, as they leave a mast horrible stench behind them, very disagreeable to

the rats; and great numbers of these animals, particularly the polecat, are frequently caught in the rat-traps; by which it is evident how naturally these vermin will follow one another, when prowling in the night after their prey; but these events, which now and then happen, ought not in the least to slacken your diligence.

The following cautions are necessary in removing them from the trap to the cage: when you go round in order to survey your traps, and find one down, take the small wire-cage, and put it close to the right-hand end, which is the handiest method of taking them out, unless the trap stands in such a position that you cannot command that end. When you have placed the cage properly, pull that end of your trap up next your right hand, just high enough for the rat to come out into the cage, let the candle stand down by the cage, which you must hold fast with your hand, that they may not drive it away; for sometimes when they see light, they will spring or bolt out with such velocity, that except you hold the cage tight and close to the trap, they will drive it away and escape. At other times they are sulky, and will not come out, if they can help it; in this case you must make a noise, and rattle against the other end of the trap; and they will soon bolt out into the cage. Before you take the cage away, be certain that there are no more rats in the trap; for several may be in at one time, and should they escape, they will not easily be caught again.

Description of the Make and Construction of the Trap.

Take three boards, two feet two inches long, let the sides stand on the bottom, nine inches high by nine inches wide in the clear; then take a thick bit of wood three inches wide, and put it in the top of the trap in the centre, for the upright centre to go in; in the front of the trap at the bottom, cut a hole for the trigger, half an inch wide and three inches high; line the inside of the hole with some pieces of tin about an inch wide, that they may not deface the inside of the trap, for a rat will always gnaw and scratch wherever he sees any light; then take two pieces of board to go in even or level at each end, and under these take two short pieces, six inches high, to go in easy, nailing the top down to these at each end, and then hanging the top pieces within an inch of the end nearest the centre, they will go up and down together. In the centre at the bottom of the

trap, against the back, place a piece of wood two inches long, and half an inch thick, make a hole in the centre of it, put a nail through without a head, fasten it down to the bottom of the trap, and let the nail stand up half an inch high, in order to hang the bridge on; then take a piece of half-inch board five inches wide, and seven inches and a half long, make a hole in one end in the centre, and at the other end put a strong bit of wire, and let it come through the trigger-hole; bent and turned up at the extremity a quarter of an inch, that it may hitch or fasten to the trigger; and over the trigger-hole about half an inch, nail a little piece of wood about two inches long, in order to stop the tiller, to prevent its going into the trigger-hole; let your standard at the top of the trap be five inches high, with a notch in the centre opposite the trigger-hole; let it be half an inch wide, and two inches down; then you must put a small nail at each end, to both which tie a string, and bring them through the notch in the standard, and tie them both together; then cut one end off, and bringing the other end down, tie it to the trigger, which is the small piece of wood tied to the end of the string, in order to set the trap, which must be set up about six or seven inches high at each end. The intent of having the under pieces but six inches high, is that you may be enabled to take them out with the greater safety; for when you place the small wire-cage at the end of the trap, then lift the end thereof level or even with the small hole at the side of the cage, and there will be sufficient room for the rat to go into the cage.

You must put the trap into a large box, in order to keep other animals from eating the food prepared for the rat, and likewise to hinder the dogs from coming to it; for sometimes when they find a trap where the rats come to feed, they will lie by it, and baulk the rats. This box, therefore, is a safeguard, or defence for them, for when any thing disturbs them, they will run in at the holes at each end of the bottom of the box to save themselves, and when the ends of the trap are sheltered, they will feed quietly; if therefore your dogs should come and disturb the traps, you must prevent them, and mind to lock the boxes, if about to leave them, that they may be undisturbed during your absence.

Description of the Box for inclosing the Trap.

This box should be three feet long, a foot and a half

wide, and twenty inches high, with two small holes, one at each end at the back, close to the bottom of the box, about three inches diameter, or square, as you like; then the rats can go in and out without being disturbed, and no other animal can take their food but themselves. Let the inside traps have a pound weight of sheet-lead nailed on each end, which will make them strike quick, and keep the end down, that they may not effect their escape for want of sufficient weight; and for the more effectually preventing them from getting their noses under the end, and lifting them up, take a small piece of wood an inch wide, and three quarters of an inch thick, and put it across at the bottom, in the inside at each end, that the end of the trap may strike down flush without side. Let the piece of wood be lined with tin, that they may not gnaw it away. Let the traps be made of stout inch fir, which is the best wood you can make use of; for they will never warp or bend, as other wood does; but any old packing-box will do for the outside. If they are not exactly made as already prescribed, they will answer the intent, but if obliged to make new ones, you may as well follow the directions given.

How to scent the Traps, and otherwise allure them.

When you have set all your traps to work, you must scent them in this manner; take twenty drops of the oil of rhodium, six or seven grains of musk, half an ounce of the oil of anniseed, put them into a small phial for use, and before you set the traps, shake them well together, then scent your traps as follows:—Take a small piece of paper twisted up, dip it in the bottle, and rub each end of the trap, and put two or three drops on the bridge, and likewise the holes at each end of the box; leave the paper at each trap, and let every paper be served in this manner; the reason of mixing these three ingredients together is, that in some places the rat loves the smell of rhodium, in others they like the smell of musk, and again in other places, they love the smell of anniseed; on this account mix them all together, that the scent of either one or other of the above ingredients may entice and allure them to the trap. When you first set your traps to work, different means may be used according to the different places you are catching at; if it be at a dog-kennel, you must put some small pieces of boiled flesh about in the trap as well as the seed; if in a slaugh-

ter-house, then some small bits of fat, or small pieces of guts; if in a brewhouse, some malt; if in a still-house, some of the meal; if in a mill, the same; if at a barn, some corn as well as the feed; in short, whatever places your traps are set in, you must put some of the same things in the trap as they have been before used to, in order to deceive and allure them. You must not use any of the scenting in the feed, for there is nothing they are so food of in their feed as the oil of carraways.

How to prepare the Food or Feed.

Take a pound of good flour, three ounces of treacle, and six drops of the oil of carraways; put them all into a bowl, and rub them well together, till it looks all alike; be sure to mix it well; then put a pound of the crumb of bread to it; for they like the bread mixed with their feed better than the feed alone, it being too luscious, for which reason they do not like it so well by itself; but that night on which you catch, put no bread to it, lest they should carry it away.

Description of Wire Cages.

There is a necessity for having two wire cages, one small for going round your traps, in order to take the vermin out to put them in the larger one;—this should be nine inches in length by nine wide, four inches and a half high, with a fall in at one end, and a door at the other: the first to let them in at, and the other to let them out into the great cage, which must be twenty inches long, nine inches wide, and eight inches high, with a fall at one end to let them in from the small cage, and a door at the top to take them out. When you are prepared for catching, set your great cage out of the way at some distance, that the other rats may not hear them squeak, for that will baulk your sport, and occasion them to run away. In the morning, if you do not intend to drown them, (which is the best method of destroying them) but are desirous to take them out at the top of the great cage, this may be done very easily; for if you do not hurt them, they will not bite; by standing together in the trap they are cowed, and have not the least notion of biting, unless you should happen to squeeze them too hard; but you may take them out one by one with your hand, very safely; indeed, when there are but four or five left behind in the trap, they are

apt to be very violent and outrageous, and in that case you must shake them out. There is a wide difference in the temper and disposition of these animals; for some are so savage and untamed, that they will set up their backs, look very fierce, and cry out, if you do but look at them; but when you meet with any of this kind, shake him well in a cage, together with the rest; and observe when he has put his head among the others, to take him out by his tail, and he will not bite: when first caught, they must not be handled directly, as in their rage they will bite any thing.

Other Traps for catching Rats.

If it be in a quiet place, where you can lock the door, or in a barn, or the outside of a barn, at a farm-house, the common hutch or box-trap, may be used with some efficacy, but this must also be sheltered at each end (the reader will find a description of this trap in the article of THE POLE-CAT); but the disadvantage of this trap is, that you are never certain of catching above one rat at the same time, unless they should happen to come in droves, and fight which shall get into the trap first, and then the rat which touches the bridge causes the trap to fall at both ends, and shuts his companions out, and those companions, being thus apprised of the danger, will never enter it when it is afterwards set. Then there is a delay attending this trap in taking out, or drowning the captive rat or rats, if by chance you take two; but it is five hundred to one that a couple are ever taken at the same time.

Some make use of a steel-trap, but it is so exposed, that if you take a rat, his cries will make the rest so shy that you will never take another in the same place. The common method of setting a steel-trap is, to bait it with cheese, bacon, &c. and to place it where they resort.

N. B. The proper method of setting steel-traps, with directions, &c. will be found in the article of the common house-rat.

How to destroy them without a Trap.

As these rats frequently come where no traps can be conveniently set, the following method of killing them may be used:—Take a quart of the same food, before made use of in taking them in traps; rasp three figs of

nux-vomica, add to these a quarter of a pound of crumbs of bread: mix them all well together, and this will be their certain bane; but first give them some without the nux-vomica figs, for two or three succeeding nights, and when they find it agrees with them, they will then eat that mixed with the fig, with freedom and greediness.

You should never poison rats in houses, except in cases of absolute necessity; and, if it must be done, by no means use arsenic, or corrosive sublimate, which is too often practised, for then they creep into holes about the house, get between the ceilings, and other places, and there die, occasioning a very disagreeable smell; besides, when they have taken enough of it, it being like a spark of fire in their bowels, and bringing on an insatiate thirst, they are restless and uneasy till they get at something to drink, either water, milk, or beer, and drink till they burst; it is therefore evident what dangerous consequences may arise, if any person should partake of the milk or beer, where these vermin thus poisoned, have been saliving and drinking; but sometimes it is a difficult matter to make them swallow enough to kill them, for the moment they taste the sharp acid it contains, it corrodes the mouth, and loosens the teeth, and they will eat no more of it; whereas the mixture of the nux-vomica, before recommended, is quite different, as there is nothing but a little bitter taste: and they will take a sufficient quantity to kill them before they find it out, when it throws them into fits, and causes speedy dissolution.

How to drive them away from their several places of resort.

As these rats are often very troublesome in coming up the shores, more especially in still-houses and brew-houses, where you cannot conveniently set a trap, the subsequent scheme may be practised with great success, which, though it does not destroy them, will infallibly drive them away. When you have caught some rats, and killed them, take a little white arsenic, finely powdered, put it into an old pepper-box, and shake a quantity of it on the fore parts of the dead rats, and put them down the holes, or avenues, by the sides of the shores, where they come in at, which will put a stop to there coming any further; for when they once perceive the arsenic,

they will retire immediately; whereas, if you were to put them down without the arsenic, the living rats will eat the dead ones; a Norway rat has been known to kill another, when put into a larger cage, and afterwards eat him; and also an old she rat, big with young, has brought forth in a cage, and immediately eaten her offspring; for there are no kind of vermin whatever so savage and brutal as a Norway rat. When you find they have taken to a rick of any sort of corn or hay, take, in like manner, some dead rats, put arsenic over them as before observed, place one in each hole they have made in the thatch, and it will make them all forsake the rick; also, by putting some of these rats thus served under the barn-floor where the rats use, it will prevent others from taking shelter, or harbouring under them. These vermin are likewise very fond of lying under the calve-pens, where they keep snug and warm: use the above method, and it will drive them away; and also in any of their burrows, if you can put the dead rats, prepared as above, so safe that nothing can easily get at them, you will obtain the desired effect.

Sometimes they will get in behind the wainscot and in between the ceiling, and not come out into the house, but remain there, and become very troublesome: in order, therefore, to make them foresake these places, find out a small hole or crack, take a handful of common salt, and put it in at the hole or crack, and pour upon the salt a spoonful or two of oil of vitriol, and this will make such a fumigation or smoke, that they cannot bear it; then stop the hole or crevice again, that the smoke may not come out; do this in two or three places, as near where you hear them as you can, and it will immediately banish them. This method is very safe, as the smoke will not in the least injure the wainscot.

How to stop up Rat-holes, in order to prevent their being frequented.

If you find any unfrequented rat-holes, it will be incumbent on you to stop them up in this manner, to keep away these visitors:—Take a pint of common tar, half an ounce of pearl-ashes, an ounce of oil of vitriol, and a good handful of common salt; mix them all well together in an old deep pan; get some pieces of paper, and put some of the above mixture very thick on the paper, and place enough of this into the holes to stop them,

and then let the bricklayer make all secure. If you should find any of the holes open again, you may be certain you had not put in a sufficient quantity; put in some more; and if done as it should be, they will never be opened again, while taste or smell remains.

How to destroy Field-Rats.

It being dangerous to leave traps in open fields, observe, in the canicula, or dog-days, when the fields are commonly bare, to put into the holes a few hemlock seeds, or mix up some flour with honey, and a little ox-vomit, till it comes to a paste, which put into the holes, and it will immediately destroy them. See *How to destroy* FIELD-MICE.

How to catch and destroy Water Rats.

The method of taking water-rats, is by setting little hutch-traps by the side of the ditch or pond where they lie, with wings made of bushes, or raised with mould, running aslant from the trap, as a guide for them to go in, such as they have in warrens. Feed them with any thing green, such as the hard part or stalk cut off a cabbage, or cabbage-leaves, which they will eat; but do not set your traps going till they feed boldly, and give them some leaves regularly, as you do the other rats their proper feed; tie some of these leaves in the trap, then you will be a judge of what comes to feed, else one will carry away as much as ten will eat, which may occasion you to conclude there are more than there really are. You may take them another way; get some small steel-traps, and put them in their runs, even with the surface of the ground, and covered over very nicely with the mould. They must also be taken with the same cage and bait as other rats, but the cage must be supported with pieces of cork or wood, so that the holes may be within half an inch of the water. You may drive your sticks into the water, and rest the cage upon them, observing that it stands firm. When you wish to destroy them at once, mix up with bait for other rats a little ox-vomit; but this must not be done, if there are any poultry near the place.

How to destroy the common Rats.

When you perceive the places they frequent, which are easily discovered by the blackness they leave, particularly along the cross-beams of houses, you must there place one of the traps you there set for Norway rats, and put some of the same feed in them, but mix more bread in it, scenting the trap in the same manner, and putting some corn in of any sort; set a trap at each place where they use, and set them all to feed, as you do the other for the Norway rat: and when you perceive that they come to feed boldly, then take them; but this must be done in the night, for they do not move by day-light as the other rats will. They may likewise be taken on the side-plates and beams, where they run, in wires and in snares, when that they spring off the beams. See *How to destroy* Mice, page 19, for the same methods as there observed will destroy these rats.

In order to drive them from behind wainscots, fumigate the place as directed for banishing Norway rats from these places.

When you use steel-traps, the following directions should be attended to for the purpose of alluring rats.

How to make Powders for Steel-Traps.

Take a doe-rat that is big with young; after you have killed her, take the navels from all the young ones you find, (the navel is about the bigness of the end of your finger and the colour of a milt), for this is what succours them before they are littered; lay them on a paper, and dry them gradually, either in the sun or in an oven; then beat them to powder, put it into a bottle, and stop it up secure, and in about nine days it will be fit for use.

How to draw Oil from Rats.

Skin them, and take only the guts and gall out, leave the liver, and when you have got a sufficient quantity, put them in an earthen jar; tie a sheet of paper, or bladder, over it; then put it in a hot oven, and let it stand till they are dissolved, and the oil will swim at top, which take off with a spoon, and put into a small phial, and preserve till you want it. This is what rats are very fond of, and you may draw them where you please by it.

Another preparation of Oils.

Take half an ounce of chemical oil of lavender, a

quarter of an ounce of oil of rhodium, and one teaspoonful of the oil extracted from the rats; put these altogether in a small phial, and before you use them, shake the phial well.

Proper method to set Steel-Traps.

Sometimes rats will work on the thatch of barns, and when you find that, drop one drop of the oil that comes from the rats on the bridge of each trap, and put a little of the powder you before preserved on them; then set the traps into the hole, covered secure with some of the short thatch, and you are sure to take them. Upon the ground, in banks, burrows, or stacks, get some of the mould that they have scratched out, and bury your trap with the same caution; but first of all mix well some of the powder aforesaid with it, and then oil your traps as before-mentioned.

How to draw Rats to the places where the Traps or Cages are laid.

Every trap should be placed as secretly as possible, and straw or fern shook round it, that the rats may approach it in private. If you find any holes in barns, &c. that go through into orchards, fields, &c. then take a red-herring, tie a string to the tail, and draw it round the building, and then to the hole where the trap or cage stands, and bait it also with a piece of herring.—This will entice rats from any distance.

MICE.

DESCRIPTION.

THERE are several kinds of mice; some quite harmless and others quite troublesome.—Of the former kind are the grass-mouse, the black shrew-mouse, and the dormouse, which last is reckoned a curious little animal, and is frequently kept in cages. This work being for the purpose of destroying and banishing all kinds of vermin, we shall therefore confine ourselves to those which are troublesome and mischievous.

The house-mouse, or common mouse, is distinguished from the rest of its genus by its smallness and its promi-

nent large eyes. It is of a dusky-grey colour on the back, and a whiter grey on the belly. They have a very disagreeable smell, and are exceedingly troublesome in the larder or pantry. Notwithstanding, this animal, when found white, is valuable and beautiful; as its full bright eye appears to great advantage amidst a snowy fur.

The larger mouse is about twice the size of the common mouse, and usually fond of caverns in the earth, in fields, and sometimes in houses; its back is of a mixed colour of black and tawny; its belly white, and there is an even line drawn along each side, which separates the two colours; the head is longer than that of the common mouse, and the eyes larger and more prominent; the ears are round and wider, and the tail long, and covered with short hairs, black on the upper part and white underneath; the legs are longer than the common mouse, and there are tubercles in the bottom of the feet.

The field-mouse is longer than the common mouse, and its head is remarkably large in proportion to its size, whence it is called the Great-headed Field-mouse. The nose is short and blunt, the eye small and not prominent, the ears short, broad, and roundish, and almost entirely hid in the fur, which is much deeper than that of the common mouse. It has also a much longer body, and the tail, which is remarkably short, is thinly covered with hairs; its legs are likewise very short; its back is of a very deep and dusky brown, with a mixture of yellow, and its belly is a sort of lead-colour, the points of all the hairs being white, and the bottoms black. It is common to dry pastures, and is abundantly distinguished from all the other kinds by the thickness of its neck and shoulders; and the shortness of its tail.

The red shrew mouse resembles the harmless black shrew-mouse only in size; it is smaller than the house-mouse, and has a nose like a mole. The chief mischief done by these, is, that in harvest time they will come home with the corn, remain there, and breed.

How to take and destroy common Mice.

They may be taken alive with a cage, made after the same manner as a rat-cage, but on a smaller plan, viz. about nine inches long, four ditto wide, and three ditto high, with a box as already described; if in barns, the rat-cage will take them. The scenting-oil may also be used, and the same privacy and care must be observed.

The common traps are of little use, as they kill only two at a time, one at each end, and more frequently only one.

For destroying them, there is nothing so good as nux-vomica.—Take a quart of the seed as prescribed for the rat, before there is any bread mixed in it, then take four figs of nux-vomica, and rasp them very fine, or else they will pick the seed from it on account of the bitter taste; rub it well together, and it will be their certain bane. If they come into the larder at night, put the bread into a pan, and take the other eatables out of the way; then lay some of the feed on a piece of paper, and do this in two or three other places, which will not be attended with any danger; however, for fear of accident, what is not eaten, take away in the morning, and at night lay it down again, and so keep on as long as any come; in the dairy do the same, or in any other place where they appear; several will be found dead on the paper at one time; but remember always to lay the ingredients on paper, and then what is left may be easily taken away.

Other methods of destroying and banishing Mice and Rats.

To the powder of arsenic (vulgarly called rats'-bane) add fresh butter made into a paste with wheat, or barley-meal and honey. Spread pieces of this mixture about those parts of the house they mostly frequent; they will eagerly eat of it, and when they have so done will drink till they burst. As this is a strong poison, you must use it with caution, and always wash your hands afterwards.

Unslacked lime and oatmeal mixed, will destroy them.

Oatmeal and powdered glass only, or add to them some fresh butter, and lay near their haunts; or filings of iron mixed with oatmeal, or with dough, or oatmeal flour, will have the same effect.

Fry a piece of rusty bacon, and lay it in the middle of a board three feet square, covering the board pretty thick with bird-lime; only leaving some narrow alleys in the board, for the mice or rats to get at the bacon; on doing which they will frequently get among the lime, and be caught. In Staffordshire, it is customary to put bird-lime about their holes, and they running amongst it, it will stick to them so that they will not leave off scratching till they kill themselves.—Or take oatmeal-flour and

coloquintida, make it into a paste, and lay it in the places where they haunt.

The seeds of wild cucumbers and black hellebore, mixed with such food as they eat, will kill them. Or powdered hellebore mixed with wheat or barley-meal, made into a stiff paste with honey, and laid where they come, occasions their present death; but let the person who mixes this preparation be cautious in the use of it.

Make a paste of bitter-almonds, coloquintida, barley, wheat, or oat-flour, with honey, and put it in their holes, or where they frequent, and it will destroy them.

Mix filings of iron or steel with a stiff paste made of wheat or barley-meal, and honey or mead, and they will be destroyed as surely as they eat of it.

If oak-ashes are put into their holes, they will run amongst them, by which means they will get the scab, of which they will die.

Smallage-seed, nigeila, origanum, the fumes of any of these burnt, will drive them out of your houses.—Likewise lupins, or green tamarinds, burnt in the room, will rid you of these vermin.

If the infusion of wormwood be put into printing-ink, they will never eat the paper with which it is printed.

Good cats in a house will always keep these vermin under. Tame weasels and ferrets will destroy mice and rats, except Norway rats, of which they are afraid.

How to destroy Field-Mice.

These are more difficult to destroy than common mice, as they are shy of taking any bait. Sometimes in winter they enter dwelling-houses through sink-holes, and get into pantries, &c. being driven from the fields by extremity of hunger; when they prove exceedingly troublesome, but may be destroyed by the nux-vomica, as prescribed for the house-house.

The following methods will destroy both Field-Mice and Field-Rats, in fields, &c.

Go out in the dog-dogs, when the fields are tolerably bare, and having found their nests or holes, which are in shape and size like an auger-hole, in which put hemlock seed, or hellebore mixed with barley, and they will eat so as to destroy themselves.

To prevent your seed-corn from being destroyed by

these vermin, steep it in bull's-gall, and they will not touch it; or powder green-glass, and mix it with as much copperas, beaten fine; and also as much honey as will make the whole into a paste, and all the rats and mice will quit the fields.

These vermin are very fond of artichokes: to prevent their devouring them, therefore, wrap wool about the roots, and they will decamp; or they will be driven away by strewing plenty of horse-dung, or fig-tree ashes.

The best method to catch them in the field is, to fill an earthen pot half way with water, put it in the ground and cover it over with a board that has a hole in the middle; then cover the board with straw haum, or such rubbish, under which the mice take shelter; they will naturally creep to the hole, and be drowned by falling through into the water.

A good trap for gardens and orchards, is three sticks placed like a figure of 4; bait it with cheese, and lay upon it a tile, which falling down when they touch it, will kill them. Some persons mix sand with their corn, which deters them from burrowing in it, by falling into their ears.

How to preserve Corn from Mice and Rats.

Place in the ground four or six posts, according to the size of your granary; let these be from six to nine feet high, on the top of which must be a floor of wood to put your corn on, and about the posts put Dutch tiles, which being smooth, the vermin cannot get up. When you erect a granary, or a barn, let it be with sides and a roof; if only a stack, cover it with thatch, sometimes the supporters are made with two stones, the bottom one being three feet high, two in width at the bottom, and one at the top; over this is laid another stone about a yard over, and frequently in a circular figure, which is the best. The corn which is for stacking must be bound in sheaves, that the ears may be turned inwards, to prevent crows, pigeons, and other birds, from getting at it. If you think that mice or rats have got into your granary; thrust a greasy stick into it, and by gnawing the stick, they will discover themselves.

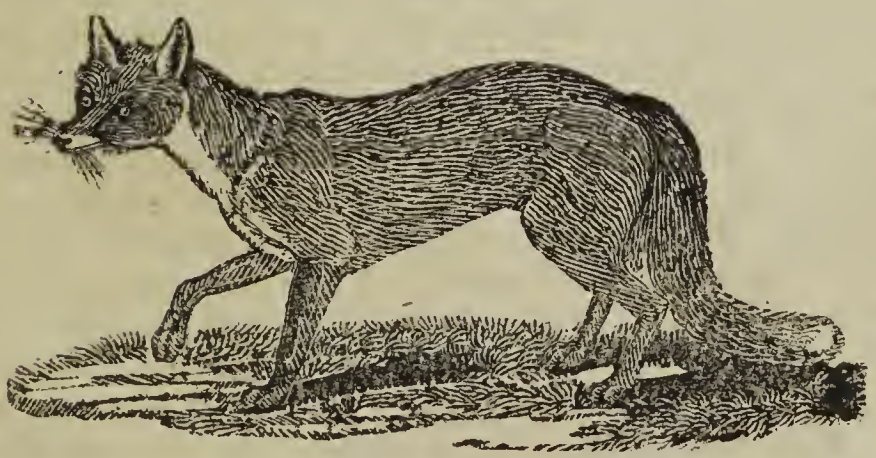
Rear-mice, or bats, may be driven away by the smoke of ivy burned on the spot.

How to keep away and destroy Red Shrew-Mice in Corn, &c.

The best method would be to nail some tin to the props, which would keep the mice from getting up them; and when once you find they have got into a corn-rick, the best way is to take it in as soon as you can; for these mice, in one particular, are worse than the rats among the corn; they will live a great while without water, only by licking the ends of the straws, while any moisture remains therein, and all the while they are in the ricks do infinite mischief. If it be not convenient to remove the rick, observe the following method;—take a quarter of a pound of the best nux-vomica, put it into an old saucepan with three quarts of water, boil it till it comes to two quarts, and put two pounds of treacle to it, in order to overcome the bitter taste of the nux-vomica; then take some small earthen pans, into which pour some of this mixture, and set the pans in different places, under the eaves of the rick; the mice being in want of water, will greedily drink of the mixture, which will kill them; and this method you must continue till they are all destroyed.

FOXES.

DESCRIPTION.



A FOX is a four-footed animal of the dog-kind, with a large bushy tail, sharp ears, of a rank or strong smell, and remarkable for its artifices, especially when pursued. It runs very swift, preys upon fowls, lambs, rabbits, &c. and does considerable mischief. A fox the first year is called a *cub;* in the second, a *fox*; and afterwards, an *old fox.*

How to take them by traps, and otherwise destroy them.

It is very difficult to guard against the approaches of a fox, his motions being so uncertain, unless a trap is constantly placed; for sometimes he will destroy several lambs, and poultry in the night, at farm-houses, and not come near the same place again for a considerable time, shifting his quarters to other places considerably remote in search of fresh plunder; but in large parks where hares and pheasants are constantly kept in great numbers, there is a great probability of taking them.

First, you must discover which way he comes, and for this purpose make what is termed a shrape, which is done by drawing a circle on the ground, in the park or warren, about three feet diameter; take the mould out all over, four inches deep; then take a sieve and sift a sufficient quantity of fine mould to fill it up again even to the surface; dig six of these in different parts of the park, and fill them up in the same manner. The reason for having the mould sifted so fine is, that when you set a trap, there will be no stones to intervene between the spring and the jaw of the trap, which will sometimes happen without proper observance, and prevent the trap from striking close. The next step to be taken is to procure a sheep's-paunch; tie a string to it, and draw it to each shrape; but remember, at the distance of two or three hundred yards, to rub the bottom of your shoes on the paunch, which will prevent him from discovering the smell of your feet, and at every shrape lay some pieces of strong old Cheshire cheese; come again in the morning, when you will plainly perceive whether his behaviour is shy or not; for he will sometimes eat all the cheese he can reach, without entering the shrape; the next night he will venture somewhat further, and set his feet so lightly on the mould, that you can scarcely discern their print. A sly fox should be fed for a whole week before the trap is set for him; and when he comes to feed boldly, he will trample all over the shrape, and make prints an inch deep, and in that shrape where he seems to feed the freest, it would be better to place two traps, when, without any particular accident, you will be sure of catching him. Let the traps be set in the following manner: take some mould out, just sufficient for them to lie in; and when properly placed, get some moss, and, with a small stick,

put some of it under the bridge, and likewise between the bridge and the jaw, and lay it quite smooth; now the reason of having the above stick is, that in case you should spring the trap, it will not injure you in the least, but only catch the end of the stick. The next particular you must observe, is, to procure a thin piece of board a foot in length, two inches wide at one end, and cut away at the other to hold them by; then with this board strike some mould or earth over the trap, entirely level with the other parts of the shrape; this board is absolutely necessary in order to prevent your handing the mould, for if he be the least shy, he will not approach the shrape, if you once handle it: another caution is likewise necessary, which is, not to let the bridges of your traps be too wide, for a fox had better come and put his foot between the bridge and the jaw of the trap, and not spring at all; for in that case he will come again, as he has not been baulked; but when the bridge is too wide, if he happens to set his foot on the jaw, then his toe-nails reach the bridge, and spring the trap without catching him, which will render him shy, and it will be a very difficult matter afterwards to take him. In order to prevent any such disappointment, let your steel traps be square in the jaw, and not round as the common traps are usually made, and strike but five inches high, and seven inches low in the jaw, with raw teeth, and let the tail of the trap be two feet from the tail end of the spring, for they are geneally made too short, from whence this inconvenience arises, that when a trap stands for some time in warrens or parks, the spring gives out, the purchase being so quick; whereas, were the traps formed on the principle above laid down, the spring would remain for a considerable time without giving way; and lastly, let the bridge of the trap be four inches square.

To destroy a Fox by poison.

The following is another method of taking and destroying these pernicious creatures, either in park, warren, or field; but more especially those who have been made shy, or who have lost a leg in a trap; whatever place it may happen to be in, you must take notice of all the little bye-paths round the ground, and sift some mould in each of them, and place by the side of each path, where the mould is sifted, a piece of white rag stuck upon a stick;

for if there be any rabbits or hares near the path, they by running up and down, will create such confusion in the mould, that it will be next to an impossibility to distinguish the impression of the fox's foot; the intent therefore of these white rags is, to frighten the rabbits and hares away; but a fox will boldly proceed along regardless of them; as soon therefore as you have discovered which path he came along, you must not trail for him as before, for that having seduced him into danger, and led him to the trap, he will remember it well, and it is a very great chance whether he will follow the trail at all. But take two figs of nux-vomica, let them be quite white and sound, for those that are of a brown colour are neither so strong nor so efficacious) then rasp them very fine, take a piece of good dripping as big as a tennis-ball, mix with these a little flour to bring it to a proper consistency or stiffness, and then roll it in honey (for no animal is fonder of honey than a fox); and when you have found out the path he comes in, place two or three of these balls at nine or ten yards distance, for fear he should miss; place them on a small stick six inches high, in order to prevent the mice from eating them. But a little distinction is here necessary to be made; for if you are endeavouring to take a fox), whom you imagine never to have been made shy, or caught in a trap, the method of trailing, as laid down, will be sufficient to put in the path, which he will readily go up to and take; and in order still to be more certain of his footsteps, take the foot of a fox, and print it in fine mould or sand; but the former is better, if it can be got, the latter, when dry, being apt to run. By observing this rule, you will readily know the print of his foot wherever you see it. When the plan has succeeded, and the fox has taken one of the balls, it is ten to one but he will die before he gets out again; and if you print him in and not print him out, then you may hunt for him with your dog, being certain that he is still lurking somewhere in the ground.

Another method of destroying a Fox.

In some places, where traps have not been set for them, they may be caught as easy as by a dog, by a cube made in the centre where two paths cross, or in a warren, or park, or at any gate or style where he comes in; if

you do not find that he comes in at any of the above places over your shrapes, you must, as you go round the sides of the path, gates, and styles, mind whether you see his billots, that is, his dung, the term being to say, after he has dunged, that he has billoted; if you should not rightly know it, take up what you imagine to be the same, and break it, and you will find it to be full of large black-beetles; sometimes you may smell him, then look about very nicely, and it is ten to one but he has billoted somewhere near the place. Let your cube be made after this manner; draw a circle, but in the front leave just room for the trap to go in when set, then bank it up all round from one side of the jaw of the trap quite round to the other; when you set your traps, be sure to moss them, for the moss prevents the fine mould from running under the bridge, and at the same time keeps it up hollow, so that it may strike freely and properly; but when the mould runs in, it renders the trap so hard, that it is impossible for it to strike at all. If you are in a warren, put some rabbit's-guts in the back part of the cube; if these cannot be procured, place some pieces of strong rotten Cheshire cheese, which they are very greedy of; if at a farm, get some pieces of dead fowl, if possible; and if in a field, it is probable you may find some of the mangled carcases of lambs, which they have killed, and hid pieces of them in the ground, which they often do; but remember, in all these particular cases to put the bait in the back part of the cube; and whenever you set a trap for a fox, let it be placed early in the afternoon, in order that the soil you make may go off before he comes, and when you have set them, cover them with a bush, cut on purpose, to keep any thing else from striking it, till you come round at night, and uncover it again.

Sometimes when a fox is found in the earth, or is hunted in, the method is to dig him out immediately, after the following manner: take a good terrier, that is kept for that purpose, one that will lie at a fox; then you must listen, and sound him, as the warreners do their line-ferrets; dig a trench across the angle, and when you have got to the angle, perhaps he will fly back, as they frequently do; then sink another trench near him, and when you have dug down to him, take care he does not bite you, as he is a fierce animal, when made desperate,

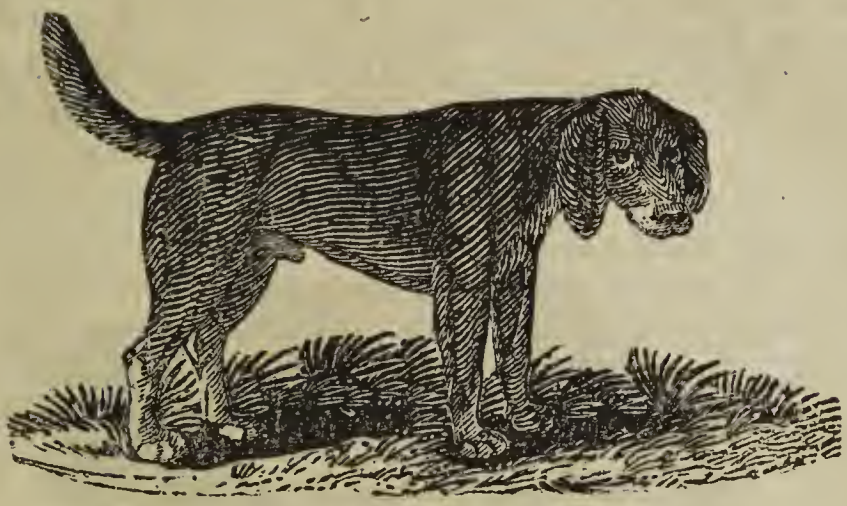
and bites very hard; in the next place, take your dog back, that you may get him out; this is what we call drawing him, as follows: take an old hat, or any thing of a similar nature, in your hand, and dodge it before him, when he will catch hold of it immediately, then with the other hand catch him by the back part of the pole with all possible quickness; and this same method must be observed when you have one in the trap, if you have a mind to take him alive, and always remember to have a muzzle ready to put on him directly, and put him into a sack, and then you may do what you please with him afterwards; for the muzzle, take a bit of strong tape, put it over his nose, bring both ends down under the jaw, and tie them tight together; then bring it along under his throat, an inch and half from the first knot, then tie them both together in one knot again, then bring the two ends up behind his ears, and tie them right.

The trail for alluring a shy Dog-Fox.

When you have taken a bitch-fox that goes a clicketing, take and cut that vessel which contains her sperm, the same as the sow-gelders deprive bitches of, when they spay them, mixing with this some gum mastich, and put them as soon as possible, after being taken from the animal, into an earthen pot, keeping it quite close, and it will remain serviceable a whole year: and when occasion offers, take a large piece of rind of bacon, broil it well on a gridiron, and then dip it in the pot, using it as a trail in the same manner as the sheep's paunch before described.

N. B. There is one season of the year when a fox will not run after a trail, at least very rarely, and that is in the Spring, when he gets plenty of young rabbits and leveret, for then he is dainty; when this is the case, another method must be taken. At this time of the year, the bitch-fox goes what is called a *clicketing*. You must mind which way he comes, which may be done by sifting some fine mould in all the little bye-paths, and when you have discovered the right one, place two steel-traps about twenty yards distant from each other, for fear he should miss one; but lay no bait for him, and if he comes, there is the greatest probability of his being caught.

SHEEP-KILLING DOGS.



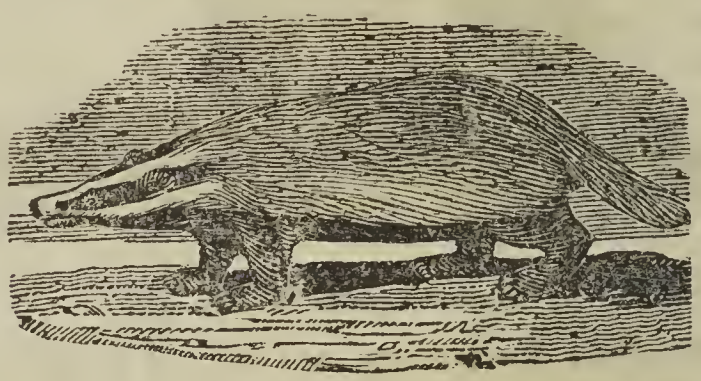
How to take them, &c.

GET two good steel-traps, set one of them by the side of the gate, stile, or gap, where you imagine he enters, within side of the field, and cover the same, but do not handle the mould; then take the liver of the sheep or lamb he has devoured, cut them into slices, fry them in some good dripping, and put them on the back part of the cube; then take a piece of the flesh of the sheep, or lamb, and rub it all about the gate, or stile, &c. in order that he may be allured by the scent; then scent another trap in the same manner at a different gate, for fear he should not come in the same way; get a sheep's paunch, and draw a trail all round the field, and draw it up close to the mouth of each cube or trap.

When these traps cannot be had, the subsequent method will supply their place in some measure, and be attended with success; when you have discovered in the morning, that he has been among the sheep over-night, get some good dripping, as big as a tennis-ball, rasp two good figs of nux-vomica, and mix them together, stiffened with a little flour; make several of these balls, and at evening trail a sheep's paunch, tied to a string, to each gate, stile, or gap, where you imagine he enters, putting one of these balls at every place, fixed on the top of a small piece of stick, about six inches high, with the other end in the ground, which will prevent the mice from eating it; when you have trailed to one place, there stick the ball, trailing on to the next in like manner, till you have got quite round the field; let this be done just at

dark, and go again in the morning, and observe how many balls are gone, the remaining ones take up, and put them down at night, and so proceed till you find he has swallowed some of them, which he certainly will, if he chance to come, and which will effectually destroy him.

BADGERS.



DESCRIPTION.

The badger is a large, grey, hard-haired animal, and resembles both a pig and a dog. It is not near so hurtful as many other animals of the vermin kind; for the chief mischief he does, consists in scratching of earths or holes, which afterwards serve for the foxes to harbour in; and in scratching and grubbing up the ground, in searching after his food, such as pig-nuts, roots, and insects, on which, and on beach-mast, acorns, crabs, and other trash, he subsists; though some authors have falsely affirmed that he destroys and feeds on young lambs, pigs, and poultry. He stinks very much, fattens by sleeping, and shews his age by the number of holes in his tail, one being added every year.

How to take them.

When you have found out one of their earths, let two persons go out in the night, while they are in search of their food, and put a thin sack into the hole, and fasten it at the mouth, that the badger may not run away with it; then let one person remain near the hole, while the other beats round the fields with a dog, in order to drive him home; when he finds the dog after him, he runs to his hole as fast as possible, and goes into the sack, which slips close like a purse; the party who stays

near the hole, on hearing his approach, lays hold of the mouth of the sack, and pulls it out with the badger in it, and this method is termed, *sacking the badger*. Another way is to place a steel-trap, in which you will catch him very easily, as he is not near so shy as the fox; when you come to his earths or holes, make the mouths of all the angles quite smooth, and come again the next morning, when you will see whether any have been in or gone out, and if you trace them in and out, then put a trap in each earth, and you need not fear catching him; but remember to stake down your trap, that he may not go away with it.

MOLES.

DESCRIPTION.

The common mole is a little animal, of a bluish-black colour, sometimes quite white, and a very mischievous to farmers, by throwing up the ground of their pastures. Its fur is very short, soft, and thick; its nose is like that of a hog; the teeth on the sides of the upper jaw are single and eminent, and those further within the mouth are armed with many points; it has scarce any neck, its head seeming to be set between its shoulders; its legs are very short, its claws short, and its toes five in number on each foot; the inner part or sole of the fore-feet much resembles the palm of a human hand; its claws on these are more robust and strong than in any other animal of its size; the whole feet and toes are placed side ways, and are calculated for digging, the mole being properly a subterraneous animal; the tail is short and hairy; the eyes are very small, and have apertures in the skin, through which they may be easily discerned; they are very black, about the size of a millet-seed, and fastened to a nerve. It has no external ears; the skin is so very firm and tough that it requires a sharp knife to pierce it. This animal has an exquisite sense of smelling, which directs it to its food, viz. worms, insects, roots, &c. It breeds in the spring, and brings forth four or five young at a time. It makes its nest of moss, a little beneath the surface of the ground; and screams much when taken.

There are other kinds of moles abroad, but none of any sort in Ireland.

How to take Moles with Traps.

These animals do great mischief in gardens and grounds; observe therefore the outside, for their angle or run; if there is a path in a field, it is very probable they have a run across the path, or at a gateway, as they frequently have one: these are what are called the main runs, and about two or three inches under the earth, and may very easily be found by the heaving up of the mould or earth, along which they will run ten times in a day. When you have discovered these runs, you must tread in the earth tight, and when you come that way again, see whether it is as you left it; and if you perceive the mole has been along, then set a trap, by which means, you may take several of them in an afternoon; these being their main roads out of one part of the ground to the other, it will be of little signification to set a trap in any other angle or run, for it may remain there a great while before a mole comes; seeing that in the spring, when they run near the surface of the earth, they make a great many different angles in search of the worms, of which, and chaffers, their chief food consists. If they make hills in your fields and gardens, take notice of the places above-mentioned, and set a trap in the following manner: take a piece of board, half an inch thick, four inches and a half long, by two and a half wide, then put a small hoop or bow at each end, with just room for the mole to go through; then in the centre at each side, put two small pegs, which will keep them in the trap; for sometimes one that is shy, when he finds the peg before him that springs the traps, will turn out at the side, and spring the trap, and not be taken; it is necessary therefore to use these small pegs, which will keep them in the straight road, placed as before directed. In the next place, get two strong horse-hairs, or pieces of small wire; then in the centre or middle of the bow at each end, make a hole to put the hair or wire through double, then open the hair or wire just to fit, and lie close inside the bow, like a noose; get some fine mould, make it moist like paste, and work some of it with your finger and thumb all round the inside of the bow, so that the horse-hair or wire may not be perceivable. Through the hole in the centre of the trap,

let a short bit of string come; put a forked peg tight in the hole, that may keep the string from slipping through, till the mole, by going through, pushes it out, then the spring flies up. When you have thus prepared the trap, open one of the runs, exactly the length of the trap, and put it down in the run quite level, and make it all smooth, that there may be no light discovered. Then take three good strong hooked pegs, two on one side, and one on the other, and stick them down tight; then take a stiff stick, about four feet long, stick one end in the ground tight, bring the other end down to the trap, and hitch in a loop, that comes from the hair or wire, and then it is set. When the mole comes, he pushes out this little peg, whereupon the string draws out, the bow-string flies up, and the mole is caught. In the Spring-time when you catch a she-mole, rub her back-part about the bows and the inside of the trap, by which means eight he-moles have been taken successively. When you have caught all that you perceive to move, you need only look round the outside of your fields, and keep some traps constantly going there, and they will lay hold of them as they go in and out.

How to destroy and banish Moles.

As it would be an endless piece of work for a farmer to take moles upon the outside land in common fields, the following methods are recommended:

The juice of wild cucumber, or the dregs of oil, poured into their holes, effectually kills them. Or, having made a strong lie of water and copperas, early in the morning pierce holes in all the mole-hills with a large stick, and pour this water into the holes in the evening, and it will destroy them.

Take black and white hellebore, and mix it into a paste made of wheat-flour, milk, and sweet wine, or metheglin, and the white of an egg. Of this, pellets of the size of a nut put into their holes, will be greedily devoured, and soon cause their death.

Where it might be hurtful to dig or break up your ground much, the fuming of the holes with garlic, brim-stone, or other ill-scented things, will drive them away; and if dead moles are put into their common haunts, they will totally leave the place.

It is said, that if you have a convenience of conveying

water over your ground, it will destroy them as far as it goes.

When you go to plough, take with you a quantity of water, and as the plough opens the new made mole-holes, pour in water enough to drive them out, and you may easily destroy them. Trenches made in the Spring will catch them in other lands.

About sun-rising, moles generally go abroad: in moist weather, they go out both morning and afternoon; but in dry hot weather, seldom but in the morning. They work under hedges, bushes, and trees, in frosty weather; in winter, and in wet seasons, they lie chiefly under the roots of trees, in hedges or banks, and go out every morning to feed, returning in about two hours: when the weather is dry, they go two or three hundred yards. Having remarked where they have been, make trenches, and chop down with the broad end of your staff, the earth which the mole has raised, or passed through, and tread it down with your foot lightly in trenches; make trenches in the most convenient places; if this be near their holes, it is best to take them going out, or returning.—The most proper places for making trenches, are by the sides of hedges, or near the banks or roots of trees.

Dig a hole in the earth, and therein put a glass pot, wide at the bottom and narrow at the top; place it on a level with the surface, and put into it a stinking crab-fish, which the moles will readily smell, and fall into the pot.

The best method to kill moles, is to bruise and pound together the root of palma christi with white hellebore; then pass the whole through a fine sieve, and having mixed with it whites of eggs, barley-meal, mead, or milk, and a little wine, make pellets of it, and put them into the holes. Some people make a mixture of red earth and the juice of wild cucumbers, and fill their holes with it: others dig holes round the hills, and the moles finding the air to come to them, will quit their habitations.

Some farmers, watching the motion of the ground, perceive it heave, and drive in a spade before the hole, and bring up the animal. This method, when well managed, is generally successful.

Cats and tame weasels will destroy them.

POLE-CATS.

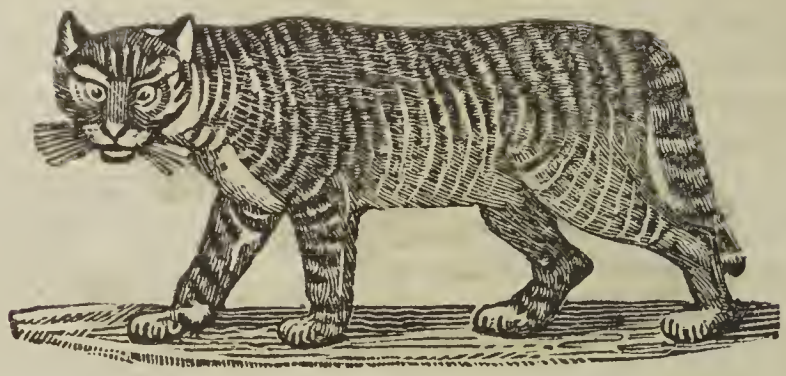
DESCRIPTION.

THIS animal is called by different names in different places—Filchet, Fitchcat, Fitchew, Formet, &c. The whole circumference of the face is white; at the extremity of the angles of the mouth, there begins a broad line of a yellowish hue, which surrounds the head, and is white in several parts; its long hairs are black, its short ones yellowish; and the throat, feet, and tail, are blacker than any other part of the body; the upper jaw stands out a little below the lower; the ears are broad and short, and are fringed, as it were, with white. It is remarkable for stinking smell, occasioned by an extremely fœtid matter, secreted by two glands within the anus. It feeds on flesh, frequently stealing hens, and other poultry, and sometimes contenting itself with their eggs. In winter it frequents houses, and will rob the dairy of milk. It commonly burrows in the ground, forming a retreat about two yards in length, terminating under the root of some large tree, and sometimes forms its lodgment in barns and under hay-ricks. It brings forth five or six at a time.

How to take them.

You may catch them in common box-traps, hutch-traps (such as are used in warrens), baited with a piece of fowl, or small bird of any kind; or with steel traps. Place a brick on each side, so that he cannot avoid coming over the trap; let this be done in the afternoon, and cover it with a thin board, that the fowls may not spring it in going to roost; uncover it while the fowls are at rest, and remove it in the morning, before they move.—Continue this practice until he is caught.

WILD CATS.



Cats which run wild in woods, parks, &c. are very mischievous in chicken grounds, and may be taken with the hutch traps, baited with fishes' heads, or bones of red-herrings, rubbing the end of the trap with the same. Let some valerian powder also be scattered in and about the traps, which will allure them.

WEASELS.

DESCRIPTION.

This is a smaller animal than the pole-cat; the head is small, of an oviated form, and sharp at the snout; the ears are small, short, and petulous; the eyes of a fierce aspect; the mouth well furnished with teeth; the upper jaw longer than the under; the body is about eight inches long, and slender; the feet have five toes armed with sharp claws; the whole body is covered with a fine tolerably long fur; the back is of a darkish colour, and the belly is white. In dissecting this creature, the heart and liver are found remarkably large.—They destroy rabbits, chickens, suck eggs, &c.

How to take them.

You may catch them with hutch or box-traps, baited with a small bird, or egg.

How to destroy, or drive away Weasels.

The best way to destroy weasels, is to take sal ammo-

niac, beat it, and mix it with the white of an egg, wheat-flour, and honey. The weasels are killed by eating of this, laid in small bits in the places where they frequent.

To prevent weasels sucking the eggs of your poultry, strew rue about the place where the hens lay.

STOATS,

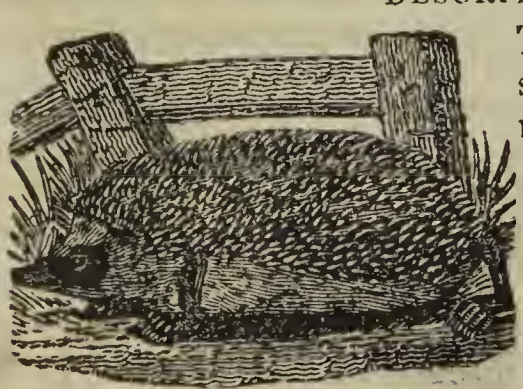
In some places called coins, are the worst small vermin of this kind that exist for destroying hares, rabbits, pheasants, &c.

How to take them.

Two or more hutch or box-traps should always remain set under the walls or pales of chicken-gardens and pheasantries; bait them with any small bird, rabbits', or fowls' guts; let them be placed on the outside, close under the walls or pales, with the back part against the same. Make a wing or low paling, about eighteen inches high, with old pales; or form a small hedge about the same height, from each end of the trap, extending four or five yards aslant, and about two or three yards open at the end from the wall, which will be a guide for them to enter into the trap; for they love to run under such places. In hare-warrens likewise, hutch or box-traps should be placed in divers parts of the warrens, with the two ends painted white, and rubbed over with the guts of any animal, which will prevent the hares from entering them, but allure these vermin. Let them be always baited in the same manner as before observed; and if you find they come into your hen-house, use the same method. If you should not have a hutch-trap, set a small steel-trap, and you will be certain of securing them.

HEDGE-HOGS.

DESCRIPTION.



The hedge-hog greatly resembles the porcupine in miniature, his body being armed and fortified all over with small sharp-pointed quills, which are an admirable defence for him against his enemies.—The

back, sides, and flanks, are set with three short and sharp prickles, and by the help of a muscle it can contract itself into a globular form, and withdraw its whole under-part, head, belly, and legs, within its thicket.

Their chief food consists in acorns, crabs, and roots; and in grubbing up the latter, they considerably damage the ground.

How to catch them.

Set a hutch-trap under the wall, or pale of any park or warren, as these little animals will run under them in the night a considerable way, and several of them by this method may be taken in the course of a week.

Bait the trap as you think proper, for no bait that they are particularly fond of, is known.

OTTERS.

DESCRIPTION.

The otter is an amphibious animal; the fore teeth of the upper jaw are straight, distinct, and acute; those of the under jaw are obtuse, and stand close together; the ears are situated lower than the eyes, and the feet furnished each with five toes, and are palmated, or formed for swimming. He is very destructive to fish-ponds, as scarce any fish can escape him; and when hunger drives him on shore, he will feed on herbs, snails, and frogs, and kill lambs, sucking-pigs, poultry, &c.

How to take them.

The method to discover his haunts is very easy; for in whatever place he preys, you will be certain to find tails, or hinder parts of fish, left undevoured at the sides of the pond, &c. for it is observable, that he eats the head and body of the fish as far as the vent, and very seldom farther. Having discovered his place, put a

good strong steel-trap in the water, down in the mud; put the mud over the bridge of the trap as much as you can, that he may not discover the trap. If you should not happen to find where he takes the water, you will see where he sits to eat his fish, and then you must set a trap or two by the side of the water in different places, where you find the bits of fish: cut a hole in the ground, then cover it over with moss very nicely: there is no necessity to bait them, for the otter will seldom touch any thing but what he kills himself.

There are small hounds employed in destroying otters; and when the otter vents, that is, when he is perceived by his pursuers, there is a spear made for the purpose, with which he is often struck and killed.

How to poison them.

Lay near their haunts an eel slit on the back, with rat's-bane put in the slit, and then sew it up again.—Place the eel from the navel upwards, out of the water, and the otter will eat it so far, but seldom farther; and his destruction is certain.

BUGS.

DESCRIPTION.

These noxious vermin abound in hot countries. In Ireland, a bug is a rarity; and various parts of England at present are not infested with them. Soon after the fire of London, they were observed to appear in some of the new-built houses, and were never noted to be seen in the old, though they were then so few as to be little taken notice of; yet, as they were only seen in fir timber, it was conjectured they were then first brought to England in it; of which most of the new houses were partly built; instead of the good oak destroyed in the old. By shipping, they were doubtless first brought to England, and are now daily brought; not one sea-port town in England is free; whereas in inland towns, bugs are hardly known. London having the greatest number of shipping, has therefore had, and still continues to have, the greatest number imported, and consequently bred in it. Bugs are hot in nature, generate often, and shoot their spawn all at once, leaving them as fish do. They spawn four times in a season, March, May, July, and September,

and generally spawn about fifty at a time, of which forty odd, in about three weeks time, more or less, (as the weather proves warm or cold,) come to life. Some of the first breed have been known to spawn the same season they were hatched; but these seldom come to life. The eggs or knits were white, and having when spawned a clammy glutinous substance, they stick to any thing spawned upon, and by heat come to maturity and life. The eggs are oval, and as small as the smallest maw-seed. Bugs of one day old, are as white as milk; three days old, cream-coloured; one week old, straw-coloured; two weeks old, the same colour, with a red list down their backs; three weeks, list copper-colour; four weeks, list browner; five weeks, list deeper brown; six weeks, the sides brown, and the list hardly discernible; seven weeks, they come to their proper colour, all over brown; eight, nine, and ten weeks, they grow larger, and at eleven weeks, are full grown. A bug's body is shaped and shelled, and the shell is transparent and finely striped, as the most beauteous amphibious turtle; has six legs most exactly shaped, jointed, and bristled as the legs of a crab. Its head and neck much resembles a toad's. On its head are three horns, piked and bristled, and at the end of their nose they have a sting, sharper, but much smaller, than a bee's; with this they penetrate and wound the skin, and thence (though the wound is so small as to be almost imperceptible) they extract, by suction, their most delicious food, the blood. This sucking the wound so given, is what is improperly called biting. Besides blood, they suck dried paste, size, deal, beech, ozier, and other woods; but never feed upon oak, walnut, cedar, or mahogany. They live all the winter, but are not so troublesome then as in the summer. The smell of them is very offensive, and when killed they stink abominably. There are some persons, indeed many, over whose bodies they will continually walk, but never attempt to suck, being exceeding nice in their choice of blood, preferring that of children, or those in a good habit of body.

How to destroy them.

Take herb-robert, corn-mint, wood-spurge, and fly-mushroom, of each a large handful; boil them in five pints of water, until it be reduced to two quarts, and then strain it off.—To every quart of this liquor, add

two ounces of corrosive sublimate mercury, and one ounce of crude sal-ammoniac. This liquor, when used, must first be heated thus: Put it into a glass bottle, and set it in a large saucepan of cold water on the fire, and when the water boils, the liquor in the bottle will be heated enough. A small piece of packthread, or wire, should be put round the neck of the bottle, to lift it in and out of the saucepan: it will corrode every vessel but glass; therefore it is necessary it should be thus heated, and by putting the bottle into the saucepan of water when cold, there will be no danger of breaking it. The heating of the liquor will make it penetrate into wood, and no bug will come near where it has been once rubbed over. This liquor, when used, may be poured into an earthen vessel, and then with a bristle-brush dipped into it, rub the bedstead all over, particularly the joints and crevices, where the bugs chiefly lodge. This, if done every Spring, will entirely eradicate them.

If any bugs appear on the furniture of the bed, use the following composition: Dissolve half a drachm of corrosive sublimate mercury in two drachms of spirits of salt; then add one pint of spirits of wine, and one pint of spirits of turpentine: shake the whole well together; then with a piece of sponge dipped into it, rub the furniture well—this will not stain or soil even the best.

The floors, walls, and ceilings, should be well washed with clear lime-water, wherein is dissolved corrosive sublimate mercury; one ounce in every pailful—to make which, add one pound of quick-lime to every gallon of water; stir it well, and let it stand, until it is quite clear; then pour it off into another vessel, and add the sublimate mercury as above.

If a live bug is but touched with a drop of this mixture, you will see it die immediately.

Other Methods to destroy Bugs.

Take a convenient quantity of unslacked lime, and put it into some water, and let it stand three or four days, then pour off your water, and add to it a quantity of common salt, more or less, as you think good (but the stronger the water is made both of lime and salt, the better it will perform the cure;) then take this liquor, and wash the floor, ceiling, and the sides of the wall,

then the bedstead, particularly the joints, very well, two or three times a week, for a month or two together, (not forgetting to give your room as much air as you can, by setting your windows open most part of the day) this liquor will destroy both bugs and fleas, if other circumstances of good housewifery and cleanliness be observed.

Boil a handful of wormwood and white hellebore, in a proper quantity of urine, till half of it is evaporated, and wash the joints of your bedsteads with the remainder.

Brimstone burnt under the joints and crevices of the bedstead, will drive them out, when they may be easily killed The room should be kept shut, while this is done, two or three times in a week.

Take the gall of an ox, and mix it with vinegar; or mix ox-gall with the dregs of oil, and rub it in the cracks or joints of your bedstead.

Powdered brimstone and old oil mixed together, is deemed a good ointment for the bedstead.

Rub your bedstead with vinegar and glue boiled together; which is accounted a sure destroyer of bugs.

Mix a handful of wormwood and rue with common oil, and as much water as will cover the wormwood and rue; let this boil till the water is evaporated, then strain away the water from the herbs, and mix with it an equal quantity of mutton-suet, and anoint the bedstead with it; and the remedy is deemed effectual.

Strong vinegar mixed with salt, being sprinkled in a room, is good against bugs and fleas.—Vinegar alone, or rue, wormwood, or rosemary, are good preventive remedies.

Bruise wormwood and mustard, boil them in water, and wash your floors and bedsteads, as a remedy against other vermin besides bugs.

Wash your bedsteads, floors, and walls, with water made strong by the boiling coloquintida seeds in it for a quarter of an hour.

Fill a number of bags pricked full of holes, with dried wormwood, and lay them between your bed and sacking, mats or boards, and some under the bolster, and on the floor under the bed.—The breeding of bugs is prevented by this practice.

Finally, and as a great promoter to cleanliness, keep your rooms decent, set open the windows early every morning, and lay your bed-clothes open for some hours;

and if you only take down and wash the joints and furniture of your bedsteads in the month of February or March, you never will have any; unless they have, by some one's filth, or neglect of washing the bedstead and furniture, got into the walls, in which case you must wash them well with arsenic boiled in water, and made strong, which will effectually destroy them; and cleanliness will ever after keep you clear of them.

N.B. The destruction of bugs should always be contrived before their time of spawning; otherwise you will find it difficult, if not impossible, to thoroughly exterminate them.

FLEAS.

DESCRIPTION.

These vermin are of a roundish compressed figure, with three pair of legs formed for leaping; the eyes are two, and simple; the mouth is bent downwards, and the colour is deep purple, approaching to black. They bring forth eggs or nits, which they deposit in blankets or any warm clothes, and on animals that afford them proper food; these eggs being very round and smooth, usually slip straight down, unless detained by the piles or other inequalitites of the clothes, hair, &c. Of these eggs are hatched white worms of a shining pearl colour, which feed on the scurfy substance of the cuticle, the downy matter gathered in the piles of clothes, or other like substances. In a fortnight, they come to a tolerable size, and are very lively and active; if at any time disturbed, they suddenly roll themselves into a kind of ball. Soon after this, they come to creep after the manner of silk worms with a very swift motion. When arrived at their size, they hide themselves as much as possible, and spin a silken thread out of their mouth wherewith they form themselves a small round bag or case, white within as paper, but without always dirty and befouled with dust. Here, after a fortnight's rest, the animal bursts out, transformed into a perfect flea, leaving its *exuviæ* in the bag. A flea, when attentively examined in the microscope, affords a very pleasing object. They live chiefly on the blood of human creatures and animals, and are consequently very troublesome bed-fellows.

Methods to destroy them.

Sprinkle your bed-clothes with lavender and wormwood boiled thoroughly in vinegar: or lay winter savory in your bed-chamber, which will destroy them.

Put under the bed a bag with holes in it, filled with wormwood thoroughly dried: or use flea-wort in the same manner: or you may kill them by putting under the bed or pillow, nut-leaves, wormwood, eye-averen, green coriander, and lavender.

Penny-royal wrapt in a cloth, and laid in your bed, drives fleas away, put in fresh once a week.

Place in the middle of the room a thin piece of board rubbed over with hog's lard, and all the fleas will gather to it; or coloquintida oil and wormwood, boiled in water, and sprinkled in the room, will produce the same effect; likewise a decoction of thistle and arsmart, or bramble and colewort-leaves.

To prevent the breeding of fleas, and often thoroughly extirpating them, chambers should be frequently washed; the windows should be constantly open, the bed-clothes frequently exposed to the air, and to look for and destroy all you can find every morning when making your bed, and they can never become troublesome.

LICE.

DESCRIPTION.

THERE are different species of lice which infest mankind, head-lice, body-lice, crab-lice, &c.—The head-louse is generally sluggish, and the body-louse more transparent and more nimble: animals resembling the former are therefore called lice, viz. book-lice, wood-lice, &c. Different animals are also infested with different kinds of lice, of which, it is said, there are about forty: sheep have one species, oxen another, &c. The natural habitation of common lice is in the heads of children and old people.—Body-lice are the effects of extreme filthiness; and crab-lice reside about the pubes. The body of a louse is labiated at the sides: the abdomen depressed; the legs are six, and serve only for walking and adhering to hair; the eyes are two, and simple; the mouth is capable of putting out a small sting, and the antennæ are of the length of the thorax. It has so transparent a shell

or skin, that more may be seen of what passes within its body than in most other living creatures. It has naturally three divisions—the head, the breast, and the tail part. In the head appear two fine black eyes, with a horn that has five joints, and is surrounded with hairs standing before each eye; and upon the end of nose or snout there is a pointed projecting part, which serves as a sheath or case to a piercer or sucker, which the creature thrusts into the skin to draw out the blood and humours, which are its destined food; for it has no mouth that opens in the common way. This piercer or sucker is judged to be seven hundred times smaller than a hair, and is contained in another case within the first, and can be thrust out or drawn in at pleasure. The breast is very beautifully marked in the middle; the skin is transparent and full of little pits, and its six legs proceed from the under parts; each leg having five joints, and their skin all the way resembling shagreen, except at the ends, where it is smoother; each leg is also terminated by two claws, which are hooked, and are of an unequal length and size; these it uses as we would a thumb and middle finger, and there are hairs between these claws, as well as all over the legs. On the back of the tail parts, there may be discovered some ring-like divisions, abundance of hairs, and a sort of mark which looks like the strokes of a rod on a child that has been whipped; the skin of the belly seems like shagreen, and towards the lower end is very clear and full of pits; at the extremity of the tail there are two semicircular parts, covered all over with hairs, which serve to conceal the anus. When it moves its legs, the motion of the muscles, which all unite in an oblong dark spot in the middle of the breast, may be distinguished perfectly, and so may the motion of the muscles of the head when it moves its horns.—Likewise may be seen the various ramifications of the veins and arteries, which are white, with the pulse regularly beating in the arteries. But the most surprising of all is, the worm-like motion of the guts, which is continued from the stomach down to the anus. The males have stings in their tails, which the females have not. They are so very productive, that, in eight weeks, one louse may see five thousand of its own descendants.

Lice inhabit the body of most animals; but some constitutions are more apt to breed them than others, and

are always the effects of dirt and idleness, or sickness; for they have not for many years been seen in the heads of any children belonging to cleanly parents, though formerly all children used to be swarming with them, owing partly to their having long hair, which prevented their heads being often washed, and partly by using a comb, which, through necessity to be used when children's heads are neglected being washed or kept clean, yet always help to propagate these vermin, as their eggs or knits adhere to the comb, and whatever head that comb is afterwards used in, will breed them, though it never had one before; but if mothers would only wash the heads of their children once a week with a hair-brush in soap and water, as all mothers of children of any decency now do, they would never be disgraced by such a shocking and filthy thing, as seeing the heads of their children filled with vermin; for in these, as in fleas and bugs, cleanliness is sure to destroy them, while indolence and filth are sure to swarm with them.

Methods to destroy Head-Lice.

Louse-herb two drachms, saltpetre and red orpiment, each a drachm, mixed with oil and vinegar, is allowed to be a good ointment.

Make up a salve of one ounce of bees'-wax, three drachms of stavesacre, and three ounces of olive oil; anoint the head with it, and both lice and knits will be destroyed.

Rub the head with salt and water, or with alum and aloes, mixed with onion and vinegar.

Rub in stavesacre powdered among the hair, and it kills them; or oil and stavesacre will have the same effect.

Mix the juice of broom with the oil of mustard, or radish, and anoint the head with it.

Boil fresh butter mixed with pepper to a salve; then cut off the hair, anoint the head, and cover it with a night-cap.

Methods to destroy Body-Lice, and Lice in Beds, on Ship-board, &c.

Take two drachms of stavesacre, and of saltpetre and sandrach a drachm each; mix them well with oil and vinegar, and use the composition as an ointment.

Take flowers of flour (to be had at the apothecaries) and boil them moderately in lie, which use as a wash.

To destroy Crab-lice.

Anoint with black soap, or wash with decoction of penny-royal: or wash often with the juice of stinking gladen, or marjoram boiled in water.

To destroy Wall-lice, Wood-lice, &c.

Sprinkle the house with a decoction of thistle and arsmart, or coloquintida, bramble, or colewort-leaves, which will drive them away.

To destroy Lice in Trees.

A long drought will cause several sorts of trees, such as gooseberry, sweet-briar, &c. to become lousy.—The remedy is to wash them with cold water, by frequently dashing it against them.

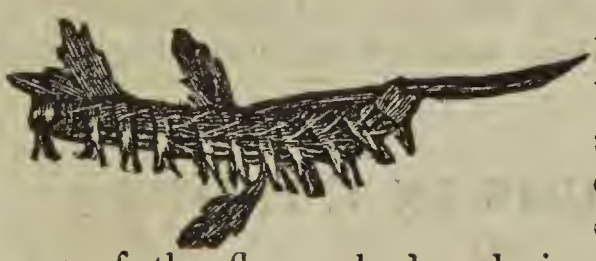
To destroy Lice in Birds.

Anoint your birds with linseed oil, and the cure will soon be perfected.

To destroy Lice in Poultry.

Wash them with warm water in which is infused a quantity of pepper beaten very fine.

CATERPILLARS.



THERE are various kinds of caterpillars, but the most hurtful are the wolf and calender-worm, which conceal themselves in the heart of the flower buds, closing them up, so that the leaves cannot display themselves, and totally destroying them; the trees which are early blowers appear as if they had been singed by lightning; those that blow late, are less liable to be thus affected.

How to destroy them, &c.

Gather them off the trees, &c. in winter; take away the prickles that cleave to the branches, and throw them into the fire: this will prevent their increasing.

Rub tar round the bottom of your tree; then put a number of ants into a bag, and hang them so that they may touch the body of the tree.—The tar will prevent the ants from getting down, and they will devour the caterpillars for want of other food.

To destroy caterpillars on cabbages and coleworts, some people sprinkle salt water over them; and this is often found to be effectual.

They may be driven away by strewing fig-ashes over them; but if this does not answer, mix an equal quantity of lees oil and urine of an ox; boil them together, and when cold, sprinkle it on the herbs, and it will destroy them. Some kill them by sprinkling the trees or plants with water in which field-crabs have been steeped after being bruised. Brimstone burnt among the trees, will also destroy them Gardeners shake them off their plants in the morning; for they will readily fall before they have recovered from the cold of the night.—An easy method of catching caterpillars is, to bind wisps of hay or straw about your trees.

To kill Caterpillars and other hurtful Insects.

Take one ounce of assafœtida, and three ounces of wormwood, steep them, and break them; boil the whole in four pails of water in the open air, because the smell is offensive. When they are boiled, strain the ingredients through a linen cloth, and use the liquor when cold, at pleasure, before the buds are opened, and the tree will not be injured; you may likewise add coloquintida, tobacco-stalks, wild vines, and several other ingredients of a similar quality.

GREEN BUGS IN GARDENS.

How to destroy them.

Sprinkle the places were they lodge with juice of henbane infused in strong vinegar. Some persons water the plants on which they settle with the cold decoction of

mustard and laurel-seed mixed with water; others press them to death with their fingers; or they may be destroyed by flea-bane, boiled in water, and sprinkled on them.

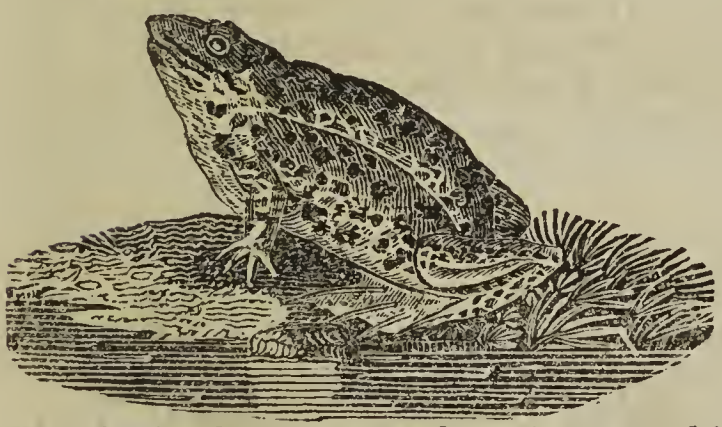
VINE-FRETTERS AND INSECTS HURTFUL TO FLOWERS.

How to destroy Vine Fretters.

Stick a rod half a foot high in the ground, with mugs or cups turned over the top of it, and they will creep under for shelter, so that they may be easily taken.

As an effectual remedy against all kinds of insects hurtful to flowers, take eight or nine crabs, put them in an earthen pot with water, and let them stand in the open air eight days; then take off this water, and while the insects are very young, water your plants with it, repeating this once in about eight days.

FROGS, TOADS, &c.



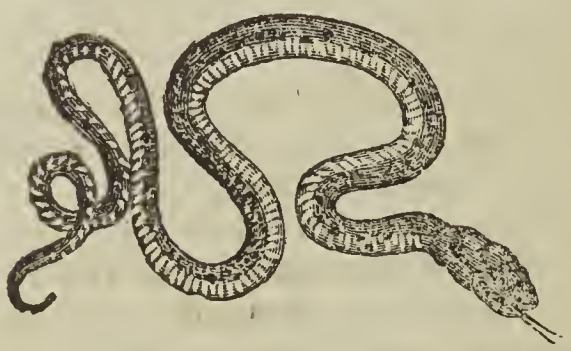
Frogs and toads are mostly found in damp situations, and, if not checked, increase rapidly. The best time to destroy them is in the latter end of February or March, in the ponds and ditches, to which, at that season of the year, they resort to spawn.—The spawn consists of a large heap or clustered mass of transparent glutinous eggs, in each of which is embedded the embryo, or tadpole, in the form of a round black globule. They break from their confinement in about a mouth, and arrive at perfection by the month of August, at which period they may be seen in immense quantities.

How to destroy them.

Take the gall of an ox, sheep, or goat, bruise it, and place it at the edge of the water, and the frogs will gather to it.

If you place a lanthorn and candle upon the side of the water, or river, that washes your garden, this will prevent the frogs from croaking.—Toads will not come near your sage, if rue is planted on the same spot.

ADDERS, &c.



The ringed, or black snake, the viper, and the adder, are the only animals of the snake family which are to be met with England: they are chiefly to be found in dunghills, along the sides of hedges, in bye lanes and pathways, and among bushes and weeds in moist places; but in the morning and evening, particularly after hot sultry days, they may be seen stealing from their retreats, and basking in the open fields. If attacked, they first endeavour to escape; but if hard pressed, will generally dart at their pursuers. The female deposits her eggs in holes, by the sides of ditches, and stagnant waters, but more often in dunghills.

To drive away and destroy them.

Wormwood, planted in divers places, will drive away all snakes and adders.—Those reptiles may also be driven away by smoking the places of their resort with hartshorn or lily roots, burning in a fire-pan.—The same effect will be produced by the roots of centaury laid about your ground; or deer's suet.—The scent of burnt old shoes, or other stinking stuff, will drive them away; as will also ash-tree boughs, taken from the trees while the green leaves are on them.

The juice of ash-tree leaves squeezed into good white wine or beer, and used either as a drink, or to wash the wound with, covering the place stung with ash-tree leaves, will cure the bite of a snake or an adder.

If in the months of April or May, you lay fresh dung in the places where they come, it will draw them to it. Turn up the dunghill in July or August, and you will find both them and their eggs.—You should do this two

or three times in the summer, destroying as often as you find them.

You may draw into one place all the snakes and adders which infest your grounds, by the following method:—Take a handful of onions, and ten river crab-fish; beat them well together, and lay them on the spot to which you intend to attract the creatures.

SPIDERS, FLIES, EARWIGS, PISMIRES, SNAILS, GRASSHOPPERS, GNATS, HORNETS, &c.

Spiders, Flies, Earwigs, and Pismires, are very troublesome vermin in a garden, especially where carnations &c. are preserved, for they are so fond of these flowers, that, without proper attention to prevent them, they will eat off all the sweet part at the bottom of the leaves, and totally destroy them.—Some people, to prevent this, erect stands, which have a bason of earth, or lead, constantly filled with water, round each supporter. Others procure the hollow claws of lobsters, crabs, &c. and, hanging them in different parts of the garden, the insects creep into them, and are easily taken; but the claws must be often searched. Wall-fruit is likewise preserved from these insects by the same diligent care.

To destroy Spiders.

So little difference is there between the house and the field or garden spider, either in their appearance or habits, that a particular description of them would be superfluous. Each female spider deposits from four to six or seven hundred eggs in a bag, which they make on purpose, lined withinside by a down plucked from their own breast. These eggs are deposited in August and September, and in less than three weeks, the young ones come to life. It is evident therefore, that the destruction of their eggs is the best means of retarding their increase. If the fumes of sulpher be applied to the places where

they harbour, it will destroy them: and if a careful attention be paid to destroying their webs, it will hasten their deaths, for by these means you not only prevent their obtaining flies, their favourite food, but you also so much the sooner cause them to expend the means which nature has provided them with to make their webs, and which when once exhausted they can never replace, and starvation becomes their inevitable fate.

To save Flowers from Earwigs, Pismires. &c.

July flowers are particularly liable to injury from earwigs and pismires; the one devouring the leaves and buds, and the other making holes in the leaves, and devouring the flowers themselves. To prevent this, boil glue in linseed oil, which place round your tubs, or pots, four inches in breadth, and in climbing up they will stick to it; but to take those that may get up, lay on the top of the July flower-sticks, lobsters-claws, with wool or tow in them, and paper caps; and examine these in the morning for your prey.

Place in different parts glasses with water and honey, in which the insects will drown themselves. Six or seven of these glasses will be sufficient.

To drive away and destroy Pismires.

Laying a quantity of human ordure on the ant-hills, occasions them to leave the place. Another manner of driving them away, is by the root of wild cucumber.—Muscle-shells burnt with storax, and beat to powder, strewed over the gardens where they are, will compel them to quit their holes, and prove their destruction.

Mix some powder of arsenic with honey; put it into a box made with cards or pasteboard, pricked full of holes with a bodkin, hang these boxes on the trees, and it will kill the vermin. Be careful not to make the holes too large, lest bees likewise should get in, and be poisoned.

In winter, the ant-hills should be dug up, and the core taken out, that when you lay your turf down, it may lie lower than the other ground. This prevents ants returning, and the rain and frost will destroy those that remain.

The dregs of oil mixed with lupins, and rubbed over ths bottom of your plants, will preserve them from pis-

mires. To keep your sugar or spice-box from these insects, you must cover it with white wool. Brimstone powdered and steeped in water, till the water is become coloured, will drive them away.

To keep away and destroy Snails, &c.

The best way to preserve tulips from field-mice, snails, &c. is to cover them with wooden frames, four inches high, and grated so with close iron wires, that none of these vermin can get through to injure them.

Numbers of snails are commonly found on wall-fruit; and in a dewy morning you may easily find where they chiefly resort; but the better way is to discover their haunts in a hard winter, and to get rid of them. They are mostly to be met with in holes of walls, behind close old hedges, or old trees, or under thorns.—You should also be careful not to pluck the fruit they have began to eat, but let it alone; for they will not begin a second, till they have finished the first.—If you set boards, bricks, or tiles, hollow against your pales, walls, &c. they will creep under them for shelter; they get into these places about Michaelmas, for security during the winter, unless you prevent it by destroying them in December, which is the most proper time you can take.

To destroy Flies.

White hellebore, steeped in milk or sweet wine, and sprinkled about the room they come to, will effectually kill them.—Or, origanum and alum, bruised and mixed with milk, will answer the same end.

Put bruised coriander-seed into a deep earthen pot, and all the flies will gather to it.—Spread an earthen dish pretty thick with treacle and honey, and they will come to it, and stick: or a mixture of dregs of sugar and water will draw them to it.

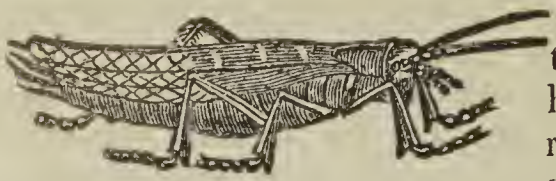
If you boil bay-berries in oil, and anoint your cattle with it, they will never be pestered with flies.—Wet the hair of horses with the juice of the leaves of gourds at Midsummer, and they will not be molested. Anoint

your cattle, and the flies will not come near them, even in the hottest weather.

The scent and smoke of hen's feathers burnt in a room, will drive away all flies, spiders, scorpions, &c. so that they will never return.

INSECTS are driven away or destroyed by various methods; especially by hindering the breeding of them, as destroying all their eggs, &c.—Fire and cold kill or drive them away, as do likewise white hellebore, wild cucumbers, coloquintida, lupins, vinegar, or decoction of bays.—Some things do it by scent; as corianders, vitriol-flowers, leaves of alder, and brimstone. Rue and verdigrease are every way offensive to them; pitch and lees of oil were formerly much used for getting rid of them; the first defends from the air, and the latter from living creatures.—Almost all insects may be driven away by the smoke or smell of storax.

How to destroy Grasshoppers.



Boil wormwood, or centuary, in water for two hours; then before sun-rise or after sun-set, with a whisk sprinkle the corn when just out of the ground with it; any bitter decoction will answer the same end, the grasshopper being an enemy to any thing bitter.

Grasshoppers, like snails, destroy the grain after it is sprouted.

How to destroy Earwigs.

Place hoofs, horns, lobsters, or crab-claws, or the branches of trees, into which they will retire; take them off carefully in the morning, and destroy them, either by treading on them, or shaking them into a pail of water.

To destroy Wasps, Hornets, &c.

Spring and summer are the proper seasons for destroying wasps and hornets. Before they are increased, destroy the old ones; for otherwise, a few will in time become a numerous swarm.

When gnats, earwigs, or wasps, are discovered in the thatch, or a hollow tree, smoke them with any stinking combustible article.

Thrusting pieces of lighted brimstone rags into the wasps' nests, and immediately flinging a spade full of earth over the holes, will destroy them.

To preserve Bees, Fruits, &c. from the attack of Wasps and Hornets.

Put cyder, verjuice, or sour liquor, into a shortnecked phial, and you may catch many in it.—Likewise lay sweet apples, the entrails of beasts, or other flesh, or treacle in an earthen dish, mixed with a little water, or any thing they love; and thus you may kill vast numbers of them.

To destroy Gnats and Flies.

Gnats and Flies are more particularly troublesome to those that live near watering places; and they likewise destroy leaves of trees and vegetables, as soon as they appear, especially turnips, whole fields of which are sometimes spoiled by them.

Having first shut your windows very close, in summer towards evening, smoke your rooms with brimstone, and burn straw in them, and those insects will fly into the flame, or be suffocated with the smoke.—Burnt fern likewise drives away gnats, serpents, and other venemous creatures.

Gnats and flies are easily attracted by ash-leaves hung up in a room; likewise balls made of new horse dung will attract them, so that you may cover them with a bason to confine them.

WORMS.

How to remove and destroy them.

If you sprinkle on the earth water, wherein the seeds and leaves of hemp have been sodden, it will bring them out. The roots both of grass and corn are eagerly devoured by worms, especially when the corn first begins to shoot. They may be killed with sea-water sprinkled on the ground, or salt and water made into brine. Some affirm that soot strewed on the ground will clear them, while others give the preference to lime and chalk for that purpose.

Green walnut-husks, rubbed on a brick or tile, and held at the bottom of a pail of water, till it is become

bitter; this water being sprinkled on the ground, brings the worms out in a short time.

If your garden is infested with worms, water your beds with the brine of salt meat, or with a strong luxivium made of ashes; or lay lime or ashes about the plants, and neither worms nor snails will come near it. You may also kill them by sprinkling mother of oil on their holes. The most proper time to pick them up is in the evening, or after considerable rain. To get them out take a poker with two prongs, stick it in the ground, and shake it well; morning is the best time for doing this.

To preserve Apple trees from Worms.

Lay sea-onion about the roots; if they come naturally, bull's-gall, or horse-dung, mingled with urine, and poured to the roots, will destroy them; but if they are hard to destroy, dig into the bark with a brass pin, or such kind of tool, till the point takes up the worms, and drives them away; but where there is a place ulcerated, stop it with cow-dung. Anoint the root of an apple-tree plant with bull's gall, and this will keep the worms both from plant and fruit.

Worms in the Body.

These are animals of various figures, structures, and bulk, which are formed in the intestines, from the seeds of some insects taken in with the aliment, &c. The belly is frequently the seat of worms, and they are of three sorts—the round, smooth sort, the ascarides, and the flat, or jointed worms. Children are chiefly troubled with the first and second, and adults with the third and worst sort, which is a chain of small worms with but one head resembling a beak, and till that beak is removed, it does not avail discharging any of the small worms, for others will daily breed in the body, and join themselves to the rest, in order to repair the breach.

How to destroy the first and second kinds.

Quicksilver in every form is destructive to them. A purge of rhubarb, with a small portion of mercurius dulcis, should be repeated at due intervals, and on the intermediate days should be given æthiop's mineral, morning and evening. Spring-water, in which quicksilver

has been boiled, will be of service to drink, and even sea-water alone. An injection of oil is also good.

How to destroy the third sort.

Take filings of tin and red coral, of each an equal quantity: pound them together into a very fine powder, of which one drachm made into a bolus, with conserve of the top of sea-wormwood, is to be taken twice a day.

Medicines which destroy these intestine enemies, should be occasionally repeated, in order to prevent their return.

Worms also harbour in the skin, and produce the itch &c. Those producing the itch are called Icari, and are effectually destroyed by sulphur.

BEETLES.

THERE are numerous species of beetles; the most troublesome and disagreeable are those which breed in kitchens, bake-houses, vaults, &c. The best method of preventing their increase, is in winter, to take down some of the boards near the ovens, fire-places, &c. and burn their eggs before they hatch in summer. Hedgehogs are very useful for killing them in vaults, &c. Likewise the fumigation of tobacco will smother them.

GARDEN BEETLES.

THESE have various names, for besides dorrs, they are called hedge-chaffers, cock-chaffers, black-clocks, &c. They are chiefly to be found among trees and hedges,

and we have had of late years great damage done by the grubs of these beetles working under ground. They also destroy corn before it shoots.

How to destroy them, &c.

The burning of couch, or any other weed that will cause a smoke, will drive them away; or if you sow sharp lime with the grain, and they eat the grain which has touched the lime, will immediately kill them.

MOTHS.

Moths commonly begin to appear about August, and then generally not till the evening, or at night. They feed on the currant tree, the elm, the willow, the nettle, and other trees and plants, and do incredible damage in depositing their eggs, which soon come to life in the caterpillar form, and greedily devour every leaf of the tree or plant on which they fix. They may destroyed, while in this stage of existence, in the same manner as directed for the destruction of caterpillars.

How to destroy them, and keep them from Clothes.

Leave a candle burning all night, and they will fly about and destroy themselves.

Air your clothes well, and lay beaten pepper among them, and it will prevent their coming near them. The branches of the bay-tree, or moist hemp, will also keep away moths, and all kinds of insects from clothes; likewise wormwood being laid among them, and if pieces of Russia leather are put into chests and clothes-boxes, no moths, or any vermin, will enter them.

To destroy Butterflies.

Butterflies very much resemble the moths, both in appearance and disposition, except that the one flies abroad in the morning and the other at night. They are also destroyed in the easiest and most effectual manner while in the caterpillar state.

KITES, CROWS, RAVENS, &c.

How to destroy them.

STEEP the entrails of pigs, fowls, or rabbits, in the lees of wine, in which you have infused a quantity of nux vomica, and throw the bait where the fowls come in the evening, or early in the morning; this will intoxicate them so, that a person waiting near the spot may easily take them.

How to take Crows, Sea-pies, &c.

Take two ozier sticks, lime them well, and lay them on rushes, grass, &c. by the side of a river; having first fixed a thread to them, at the end of which a minnow is tied by the tail. The birds seeing the minnow, will seize it, when the lime twigs sticking to their wings, they will be unable to fly, and consequently easily taken.

To catch Ravens.

Set two steel-traps for them, and put a rat between them for a bait; but when you have taken one or two, move your traps to another place, or the others will become too shy to be caught.

Buzzards may be caught in this manner: Bait the traps with the entrails or pieces of rabbits, or fowls; in the spring, you may use for bait the skin of a young rabbit, stuffed and tied to the middle, when you use two traps.

Kites, Hawks, &c. are taken in the same manner.

N.B. The steel traps on this occasion should strike seven or eight inches high, in order to clear the bait as it ought to be; otherwise the jaws might only catch the bait, and miss these winged vermin.

FINIS.

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